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FINAL SITE SUMMARY FOR THE ENVIRONMENTAL RESTORATION PROGRAM NWS EARLE NJ

7/1/2013

TETRA TECH

Site Summary

for the

Environmental Restoration Program

Naval Weapons Station Earle
Colts Neck, New Jersey

Naval Facilities Engineering Command
Mid-Atlantic

Contract No. N62467-04-D-0055
Contract Task Order 534

July 2013

TETRA TECH

PHIL-25279

SITE SUMMARY
FOR THE
ENVIRONMENTAL RESTORATION PROGRAM

NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command Mid-Atlantic
9742 Maryland Avenue
Norfolk, Virginia 23511-3095

Submitted by:
Tetra Tech
234 Mall Boulevard, Suite 260
King of Prussia, Pennsylvania 19406

CONTRACT NO. N62467-04-D-0055
CONTRACT TASK ORDER 534

JULY 2013

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JULY 2013

OVERVIEW

This Site Summary for the Naval Weapons Station (NWS) Earle, Colts Neck, New Jersey was prepared for the United States Department of the Navy by Tetra Tech under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-04-D-0055, Contract Task Order (CTO) 534. This Site Summary was originally developed by the Navy to provide brief write-ups and regulatory status reviews for each of the Environmental Restoration (ER) Program Sites (formerly Installation Restoration (IR) Sites) at NWS Earle. This document updates the January 2008 Site Summary (Tetra Tech, 2008a) and is presented in similar format and content. Individual site discussions, figures, and photos have been updated as necessary.

Naval Weapons Station Earle is located in Monmouth County, New Jersey, approximately 47 miles southeast of New York City. The Station consists of two areas, the 10,248 acre Main Base (Mainside area) (see Figure 1), located inland, and the 706-acre Waterfront Area (see Figure 2). The two areas are connected by a Navy-controlled right-of-way containing a private road and rail line. The facility was commissioned in 1943 and its primary mission is to supply ammunition to the naval fleet. NWS Earle was named to the United States Environmental Protection Agency's (EPA) National Priority List (NPL) on August 30, 1990.

An Initial Assessment Study conducted in 1982 identified 29 areas of environmental concern at NWS Earle (Hart, 1983) and led to further investigation of 11 sites. Upon being named to the NPL, the Navy agreed to conduct a Site Investigation at 16 additional sites (Weston, 1994). The remaining two sites from the Initial Assessment Study were not included because they were permitted operations under the Resource Conservation and Recovery Act (RCRA). In January 1992, the EPA requested investigation of 17 additional sites based upon an analysis of historical aerial photographs conducted by the Environmental Photographic Interpretation Center. The July 1992 Addendum to the Preliminary Assessment (Initial Assessment Study) Report recommended additional work at only one site, but the Navy agreed to further investigation at two additional sites based upon regulatory comments. These three sites are referred to as the EPIC Study Sites (EPIC Site F, EPIC Site L, and EPIC Site Q).

In September 1993, a Phase I Remedial Investigation (RI) was completed to characterize the contamination at 11 sites and to identify if contamination was migrating from any of the sites (Weston, 1993). In 1995, the ER Program sites at NWS Earle were subsequently addressed during Phase II RI activities that were completed in July 1996 (B&RE, 1996). Phase II activities included installation and sampling of groundwater monitoring wells, surface water and sediment sampling, surface and subsurface soil sampling, and test pit excavation. The Phase II field work was conducted at 27 former, known, or suspected waste disposal sites at NWS Earle. An RI Addendum, finalized in January 1998, focused on seven sites where the results of the 1996 RI were inconclusive (B&RE, 1998). These two documents have served as the basis for Remedial Action decisions.

A Restoration Advisory Board (RAB) was established for NWS Earle in February 1995. The RAB membership includes local community representatives and is co-chaired by the Monmouth County Health Officer. The RAB meets as needed to discuss site remediation milestones and to review key documents. The meetings are open to the public.

A number of the ER Program sites at NWS Earle have been grouped into operable units (OUs) comprising sites with similar site characteristics. As of this report date, 22 sites have been grouped into at least one of ten OUs agreed to with EPA. Site 26 encompasses two OUs - OU3 and OU7. The Navy and EPA have finalized and signed Records of Decision (RODs) for nine OUs.

This Site Summary provides information on 35 sites that were initially proposed for the ER Program at NWS Earle. Twenty-five of the sites have been identified as requiring No Further Action (NFA), have a remediation process in place, or have been closed in accordance with RCRA regulations. One site was remediated per New Jersey underground storage tank (UST) regulations. A second site is currently being remediated under the UST program. Table 1 provides a listing of the ER Program sites. A brief description and status summary of each site follows this overview.

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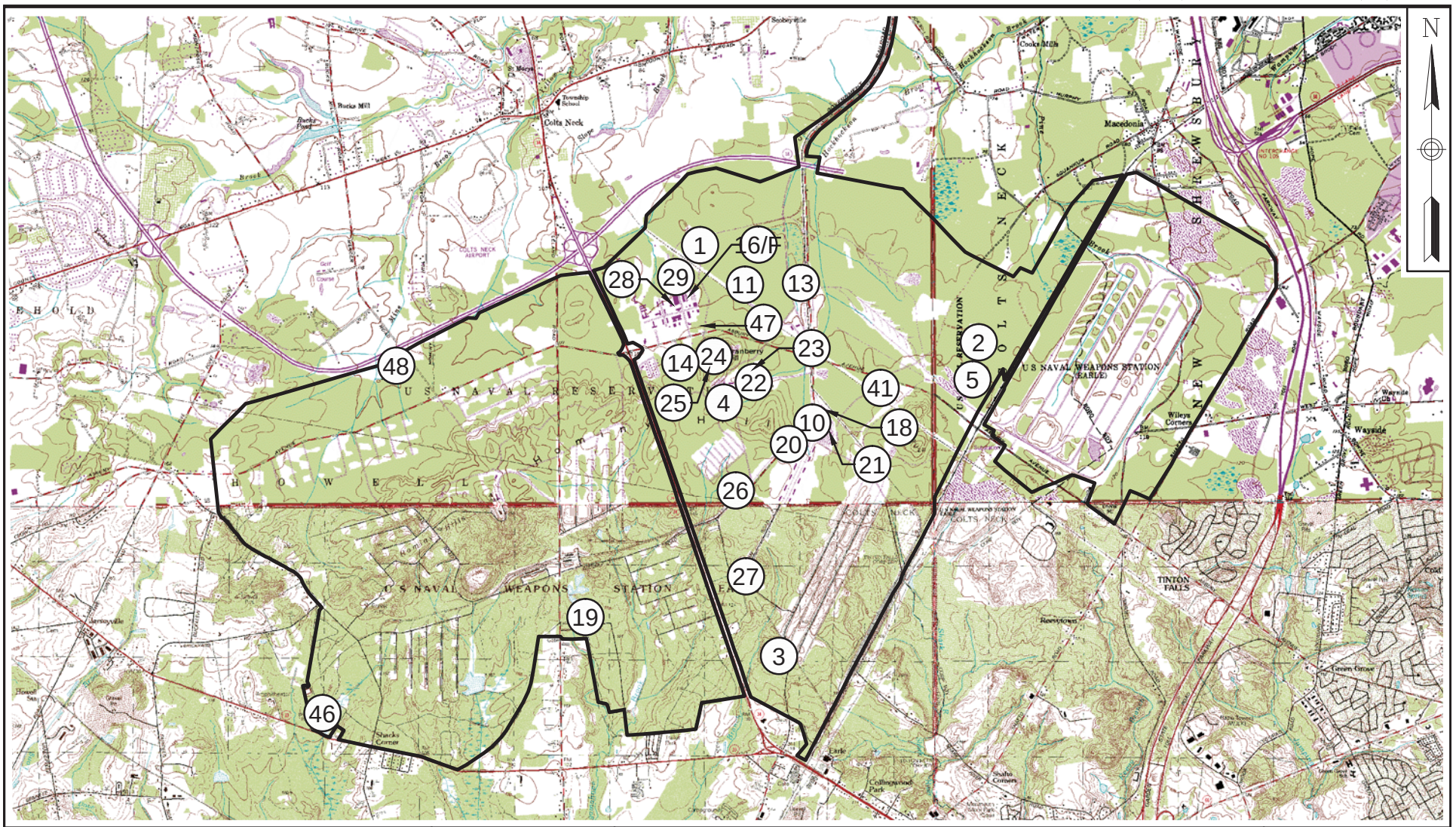

LEGEND

(22) SITE LOCATION

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SCALE IN FEET

TETRA TECH

MAINSIDE AREA
IRP SITE SUMMARY
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

SCALE	AS NOTED
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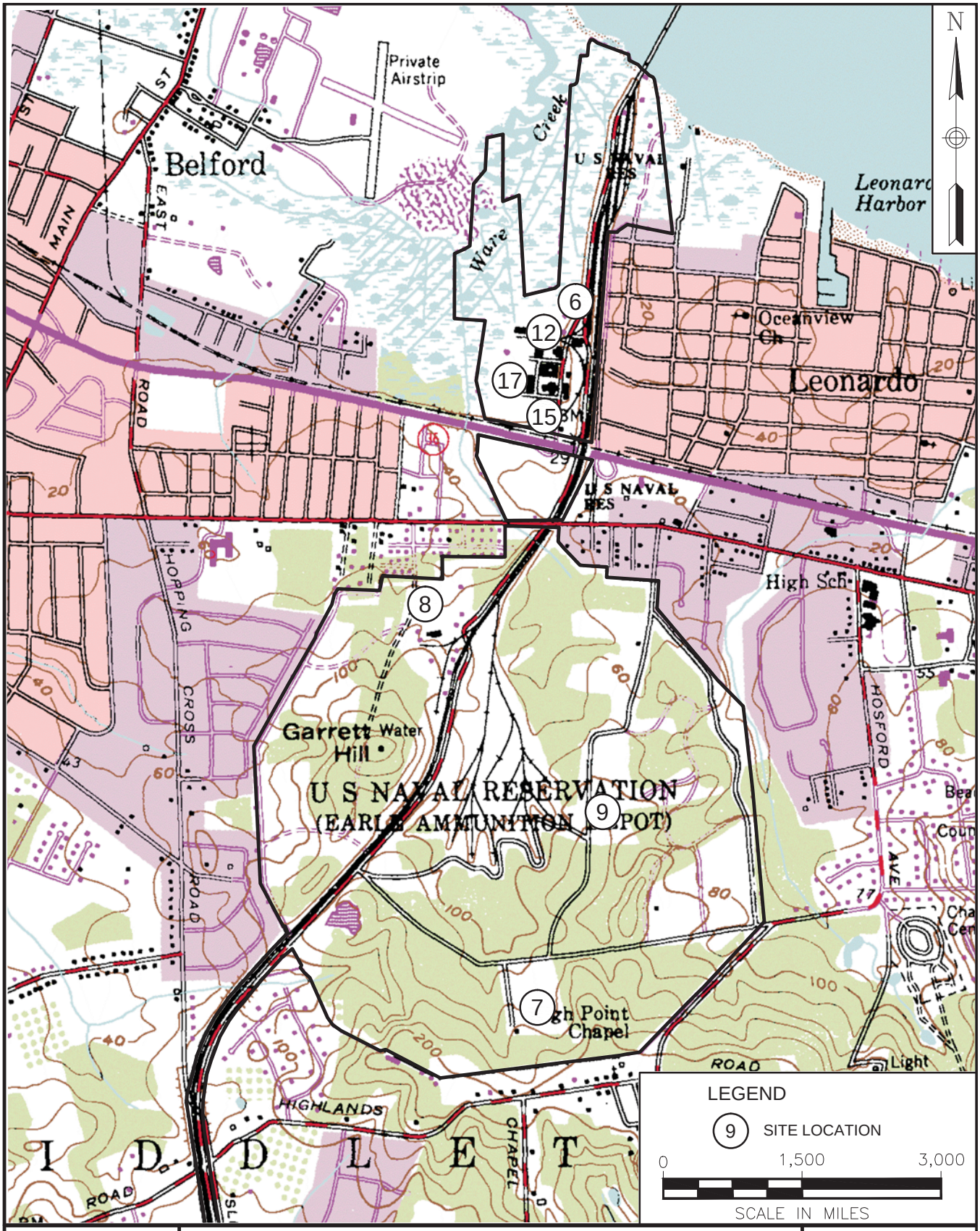
REV	0
DATE	06/28/13
FIGURE NUMBER	FIGURE 1



TETRA TECH

WATERFRONT AREA
IRP SITE SUMMARY
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

SCALE	AS NOTED
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REV	0
DATE	06/28/13
FIGURE NUMBER	FIGURE 2

TABLE 1

ENVIRONMENTAL RESTORATION PROGRAM SITES
NAVAL WEAPONS STATION EARLE
2013 SITE SUMMARY
PAGE 1 OF 4

SITE NUMBER	SITE NAME	LOCATION	OPERABLE UNIT	CURRENT STATUS
1	Former Ordnance Demilitarization Site	Mainside	8	ROD signed 2005; Classification Exception Area not required.
2	Active Ordnance Demilitarization Site	Mainside	-	Currently being operated under RCRA delayed closure status; Ongoing monitoring program.
3	Landfill Southwest of "F" Group	Mainside	6	ROD signed 2006; Land use controls (LUCs) implemented 2004; Five-Year Reviews required; Ongoing monitoring.
4	Landfill West of "D" Group	Mainside	1	ROD signed 1997; Cap completed 1998; Five-Year Reviews required; Ongoing monitoring.
5	Landfill West of Army Barricades	Mainside	1	ROD signed 1997; Cap completed 1998; Five-Year Reviews required; Ongoing monitoring.
6	Landfill West of Normandy Road	Waterfront	9	ROD signed 2007; Soil Cover and Slope Stabilization completed 1999; LUCs being implemented; Five-Year Reviews required.
7	Landfill South of "P" Barricades	Waterfront	10	ROD (No Further Action) signed 2010.
8	Landfill East of Building S-186	Waterfront	-	No Further Action (1994).
9	Landfill Southeast of "P" Barricades	Waterfront	Not Assigned	Draft Final FS report submitted April 2013.
10	Scrap Metal Landfill (Near Building 589)	Mainside	6	Cap completed 2003; LUCs implemented 2004; ROD signed 2006; Five-Year Reviews required; Ongoing monitoring.

TABLE 1

ENVIRONMENTAL RESTORATION PROGRAM SITES
NAVAL WEAPONS STATION EARLE
2013 SITE SUMMARY
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SITE NUMBER	SITE NAME	LOCATION	OPERABLE UNIT	CURRENT STATUS
11	Contract Ordnance Disposal Area	Mainside	8	ROD (No Further Action) signed 2005.
12	Battery Acid Spill Site (i.e., Battery Storage Area)	Waterfront	9	Soil excavation completed 1999; CERCLA Close-Out Report 1999; ROD (No Further Action) signed 2007.
13	Defense Property Disposal Office Yard	Mainside	5	ROD signed 2004; Cap completed 2005; LUCs being implemented; Five-Year Reviews required; Ongoing monitoring.
14	Defense Property Disposal Office Warehouse (Mercury Spill Area)	Mainside	4	ROD (No Further Action) signed 1999.
15	Sludge Disposal Area (Near Waterfront South Gate)	Waterfront	9	ROD signed 2007; LUCs being implemented; Five-Year Reviews required.
16/F	Building C-50 Diesel Fuel Line (Site 16) EPIC Site F (C-50 Roundhouse Area)	Mainside	-	Currently addressed under NJDEP UST program.
17	Disposal Site Behind Training Barge	Waterfront	9	ROD signed 2007; LUCs being implemented; five-Year Reviews required.
18	Demilitarization Furnace	Mainside	-	Closed under RCRA (1995).
19	Paint Chip and Sludge Disposal Site	Mainside	2	ROD signed 1997; Remedial Action completed 1998; Five-Year Reviews required; Ongoing monitoring.
20	Grit Blast Disposal Site (Near Building 544)	Mainside	4	ROD signed 1999; Institutional Controls implemented 1999; Five-Year Reviews required.

TABLE 1

ENVIRONMENTAL RESTORATION PROGRAM SITES
NAVAL WEAPONS STATION EARLE
2013 SITE SUMMARY
PAGE 3 OF 4

SITE NUMBER	SITE NAME	LOCATION	OPERABLE UNIT	CURRENT STATUS
21	Baghouse & Cyclone Dust Storage	Mainside	-	Closed under RCRA (1995).
22	Paint Sludge Disposal Site (Building D-2)	Mainside	4	ROD (No Further Action) signed 1999.
23	Paint Sludge Disposal Site (Building D-5)	Mainside	4	ROD signed 1999; Institutional Controls implemented 1999; Five-Year Reviews required.
24	Closed Pistol Range	Mainside	4	ROD (No Further Action) signed 1999.
25	Closed Pistol Range	Mainside	4	ROD (No Further Action) signed 1999.
26	Explosive "D" Washout Area (OU3) Site 26 PCE Plume (OU7)	Mainside	3 7	OU3 ROD signed 1998; Remedial Action ongoing. OU7 ROD signed 2007; LUCs being implemented; Five-Year Reviews required.
27	Projectiles Refurbishing Area	Mainside	4	ROD signed 1999; Institutional Controls implemented 1999; Five-Year Reviews required.
28	Waste Oil Tank West of Building C-14	Mainside	-	Closed under NJDEP UST program (1992).
29	PCB Spill Site	Mainside	4	ROD (No Further Action) signed 1999.
L (Site 41)	MSC Van Parking Area (EPIC Site L)	Mainside	Not Assigned	Ongoing Discussions with EPA.

TABLE 1

ENVIRONMENTAL RESTORATION PROGRAM SITES
NAVAL WEAPONS STATION EARLE
2013 SITE SUMMARY
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SITE NUMBER	SITE NAME	LOCATION	OPERABLE UNIT	CURRENT STATUS
Q (Site 46)	Fire Fighting Training School (EPIC Site Q)	Mainside	Not Assigned	Ongoing Discussions with EPA.
47	Closed Pesticide Shop, Building S-86	Mainside	-	No Further Action.
48	Mine Battery Site at West Pond Area	Mainside	-	No Further Action.

SITE 1 (OU8): FORMER ORDNANCE DEMILITARIZATION SITE

SITE HISTORY

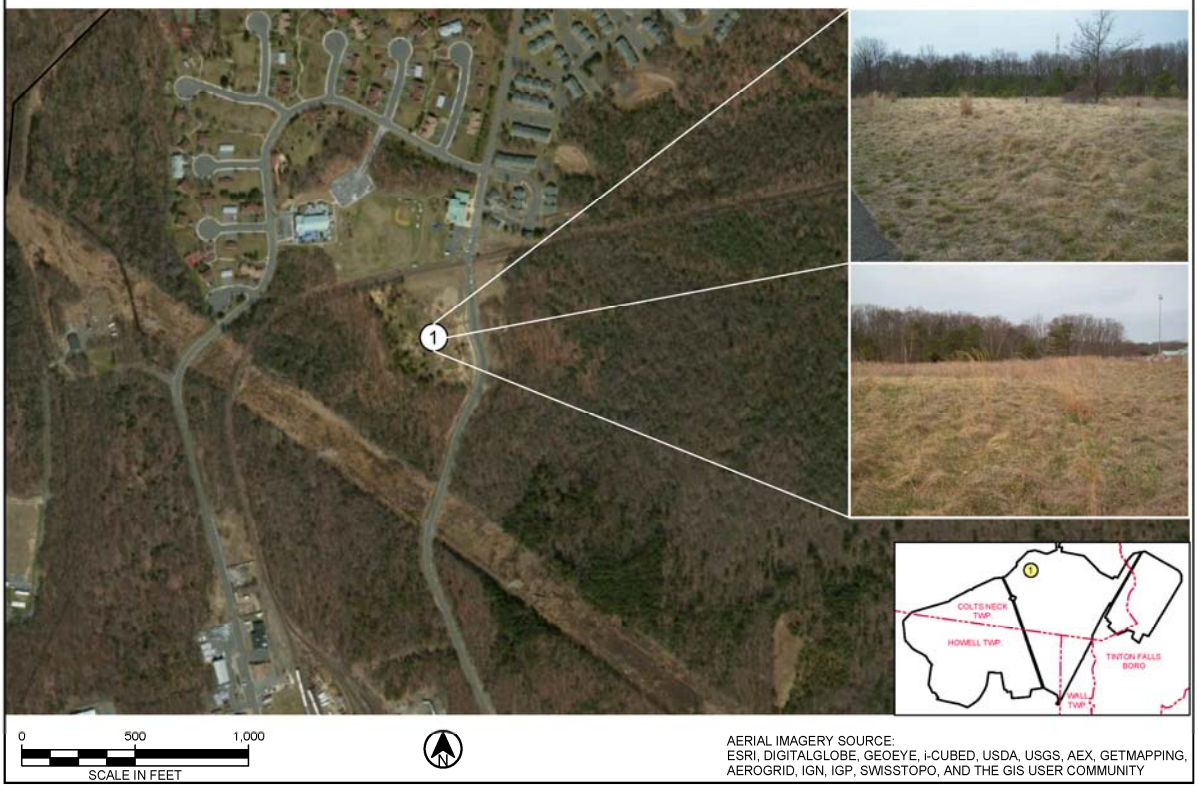
Site 1 is a 6-acre site near the intersection of Saipan and Macassar Roads (Mainside Area), which was used for ordnance demolition from 1943 to 1975. Upon closure, the area was plowed and a layer of diesel fuel-soaked hay was burned to ensure that no explosives remained. No waste handling or disposal activities have been conducted at the site since 1975. During the early 1990s a United States Army communications station and tower were located near the center of the site. No structures remain and the site is now open space.

SITE STATUS

The Phase II Site Investigation indicated low levels of metals, explosives and organics in the soil and groundwater. Additional soil and groundwater samples collected during the 1995 Remedial Investigation delineated the extent of the affected area.

A Feasibility Study was completed in October 2002. The Proposed Plan and Record of Decision (September 2004) followed. The Navy and United States EPA, in consultation with New Jersey Department of Environmental Protection (NJDEP), selected a remedy that addressed soil and groundwater contamination by instituting land use controls (LUCs), long-term monitoring, and five-year reviews. Five monitoring wells have been installed at this site. Groundwater chemicals of concern include arsenic, chromium, and iron. Groundwater monitoring was most recently conducted in July 2009, August 2010, and February 2011. Based on these sampling events, it was concluded that there is no significant arsenic contamination in groundwater and that the elevated metals concentrations detected in site wells are the result of elevated sample turbidity and are not site-related. In 2012, the NJDEP concurred with the Navy that a groundwater Classification Exception Area is no longer required for Site 1. The Base Master Plan includes a notice to future land owners stating that arsenic has been detected at a concentration above the NJDEP residential direct contact cleanup criteria in subsurface soil. Site 1 was included in the Third Five-Year Review that was completed in March 2013. Since contaminants remain at the site, a review of site conditions and risks will be conducted every five years as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

SITE 1
FORMER ORDNANCE DEMILITARIZATION SITE



AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 2: ACTIVE ORDNANCE DEMILITARIZATION RANGE

SITE HISTORY

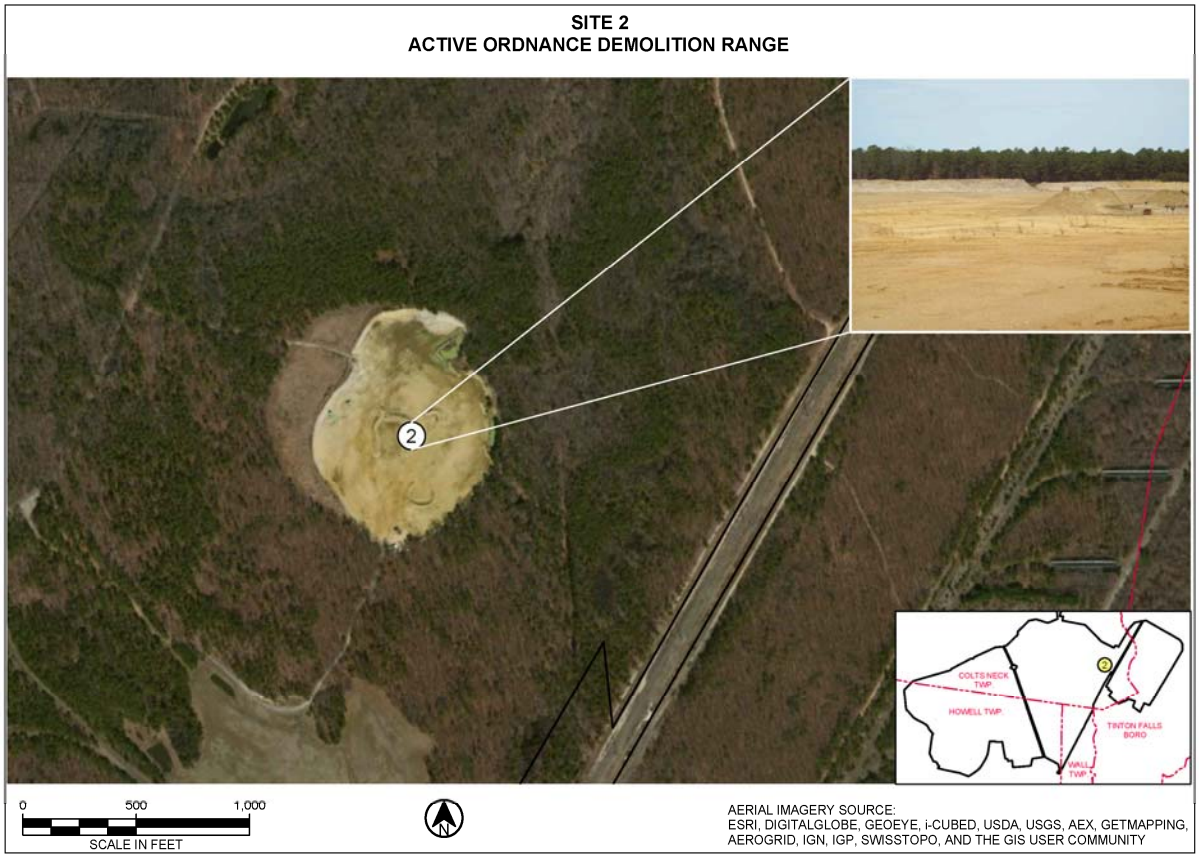
The ordnance demolition range (i.e., Open Burning/Open Detonation [OB/OD] site) is an approximately 11 acre site, which has been in operation since 1974 to treat obsolete, excess, and unsafe military munitions and explosives. The OB/OD unit had operated as an interim status RCRA treatment unit. In April 2011, NWS Earle requested withdrawal of the RCRA Subpart B permit application. The OB/OD unit will remain in operation under RCRA delay of closure status and continue to be utilized for RCRA exempt activities including training and emergency response.

SITE STATUS

Low levels of explosives and metals have been detected in soil and groundwater samples on the site. Explosives compounds were only detected in one monitoring well near the center of the site. Elevated metal levels in the groundwater appear to be related to suspended solids in the samples.

Sampling was conducted around the site perimeter during the 1995 Remedial Investigation field investigation, which concluded that soils outside the bermed area have not been significantly impacted.

Ordnance training and emergency treatment operations are expected to continue at this site. Four phases of baseline environmental sampling have been conducted to characterize site soil and groundwater. A fifth sampling phase was conducted from July 2012 through April 2013. This data will be evaluated by the New Jersey Department of Environmental Protection (NJDEP) to develop a quarterly sampling program.



SITE 3 (OU6): LANDFILL SOUTHWEST OF "F" GROUP

SITE HISTORY

Site 3 is a 5-acre site within the Mainside Area that from 1960 to 1968 received approximately 4,800 tons of domestic and industrial wastes. Evidence was found on the surface of the property indicating that sportsmen used the area for shotgun target practice at some unknown time period in the past.

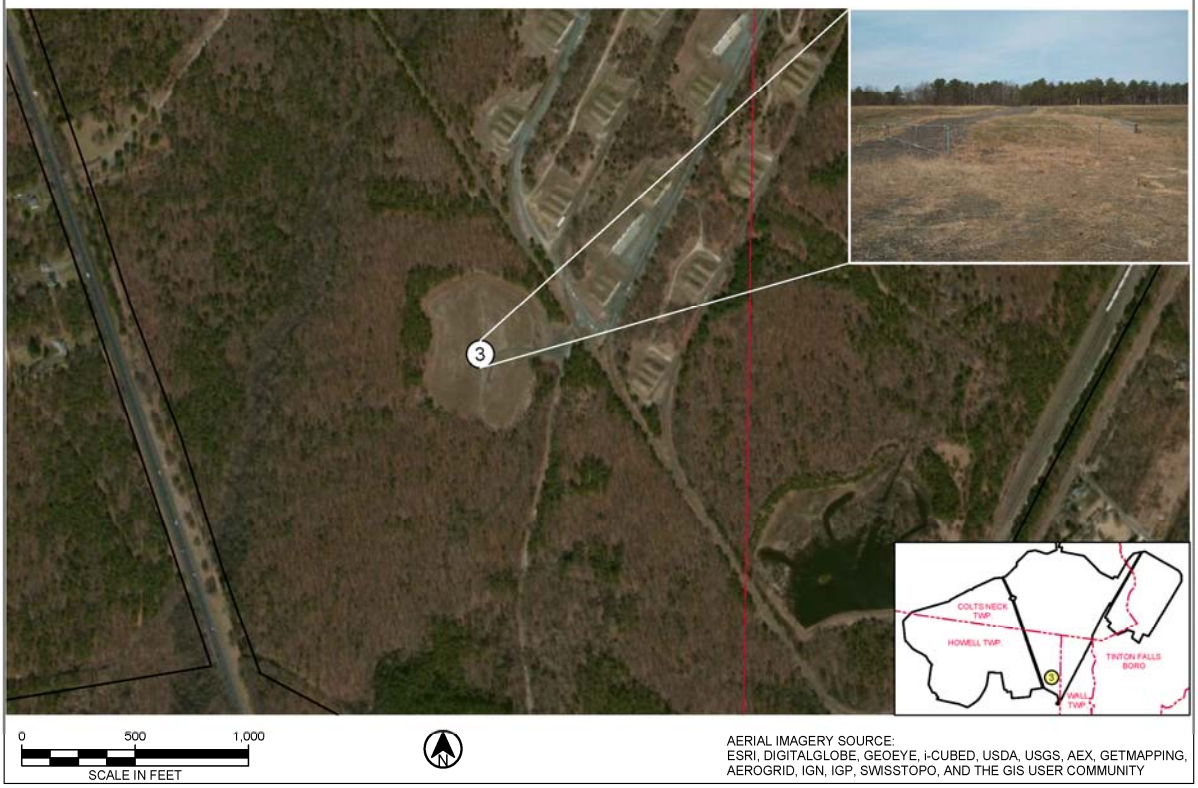
SITE STATUS

A total of eight monitoring wells have been installed at this site. Groundwater COCs include aluminum, arsenic, cadmium, and iron. A soil gas survey was conducted to identify the location and extent of a potential volatile organic compound (VOC) source area near one of the wells. VOCs detected above the NJDEP criteria in groundwater in 1991 could not be replicated. The presence of several hydrocarbon compounds in the sediments of a nearby drainage ditch suggests a limited impact as the result of overland runoff from the landfill site.

Test pits were dug in 1995 to examine waste materials and subsurface soils. Most of the material encountered was typical municipal trash. Several oil filters and antifreeze containers were found in the vicinity of the highest VOC readings from the soil gas survey.

The OU6 Record of Decision was signed by the Navy and EPA in August 2006. The Navy and EPA, in coordination with NJDEP, agreed to a vegetative soil cover system for the landfill cap. The cap was constructed by Foster Wheeler Environmental Corporation and was completed in June 2003. In 2004 access restrictions were included with the Base Master Plan files to limit future uses of the site to prevent disturbance of the soil cover. Long-term monitoring has been conducted since 2003 in accordance with an approved long-term monitoring plan. Aluminum, arsenic, cadmium, and iron have been historically detected in site groundwater at concentrations above their respective NJDEP groundwater quality standards. Site 3 was included in the Third Five-Year Review that was completed in March 2013. A Technical Memorandum summarizing the historical monitoring activities at Site 3 was submitted to the EPA and NJDEP in May 2013.

SITE 3
LANDFILL SOUTHWEST OF "F" GROUP



0 500 1,000
SCALE IN FEET

N

AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 4 (OU1): LANDFILL WEST OF "D" GROUP

SITE HISTORY

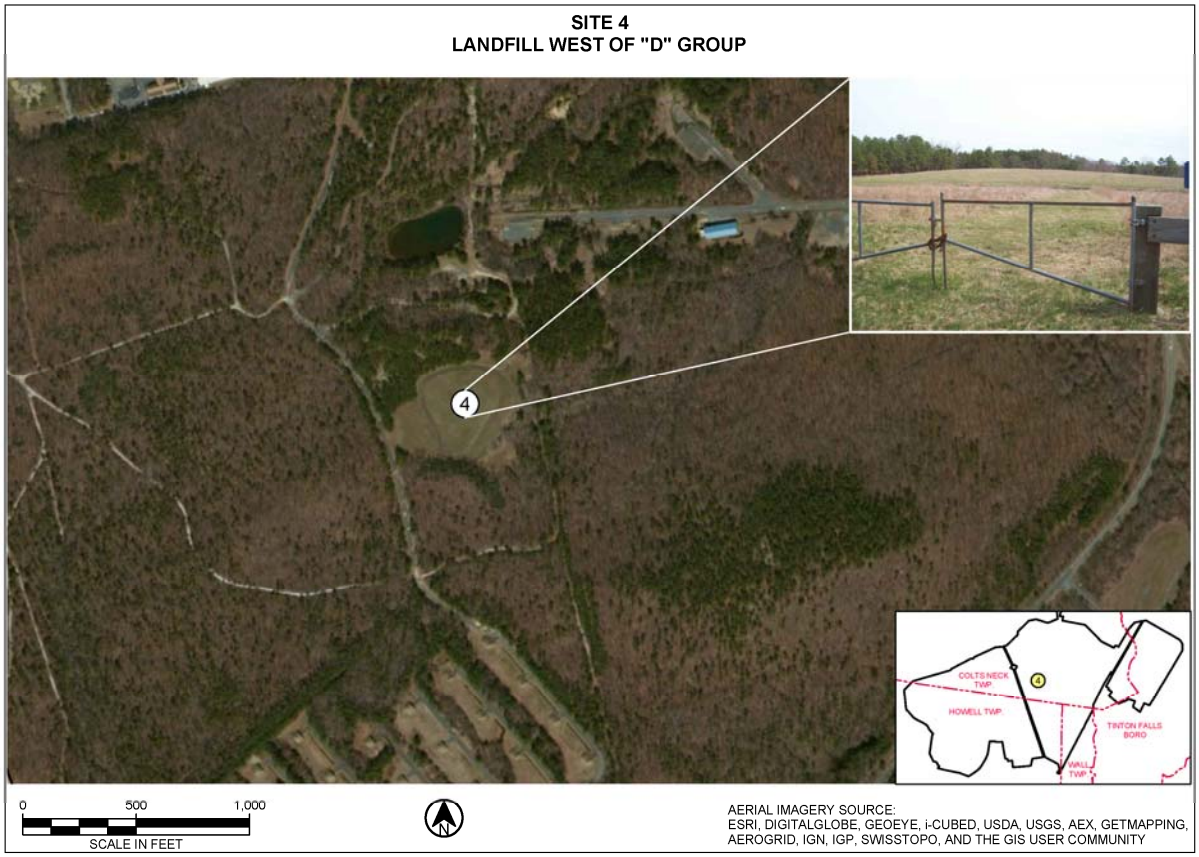
Site 4 is a 1-acre site located east of Macassar Road, which received approximately 10,200 tons of mixed domestic and industrial wastes from 1943 to 1960. Materials were placed in trenches, burned, and then covered with a thin layer of sandy soil. Pine trees were planted on much of the site in the early 1980s.

SITE STATUS

Low levels of solvents and metals have been detected in shallow groundwater at the landfill boundaries. After significant investigation, no concentrated source area of solvents could be identified. HydroPunch samples collected during the 1995 Remedial Investigation field investigation did not detect any migration of the solvents into deeper aquifers. Polychlorinated biphenyls were found in one sediment sample at a very low concentration.

The Record of Decision for remediation of this site was signed in August 1997. The selected remedy consisted of grading and capping the landfill, prohibiting use of groundwater in the adjacent area, and long-term periodic monitoring of groundwater conditions.

Construction of the landfill cap was completed in July of 1998. The Navy conducts post remediation groundwater monitoring on an annual basis. The Third Five-Year Review was completed in March 2013. Because site-related COCs remain in groundwater at concentrations above NJDEP groundwater quality standards, continued monitoring and reporting are required.



SITE 5 (OU1): LANDFILL WEST OF ARMY BARRICADES

SITE HISTORY

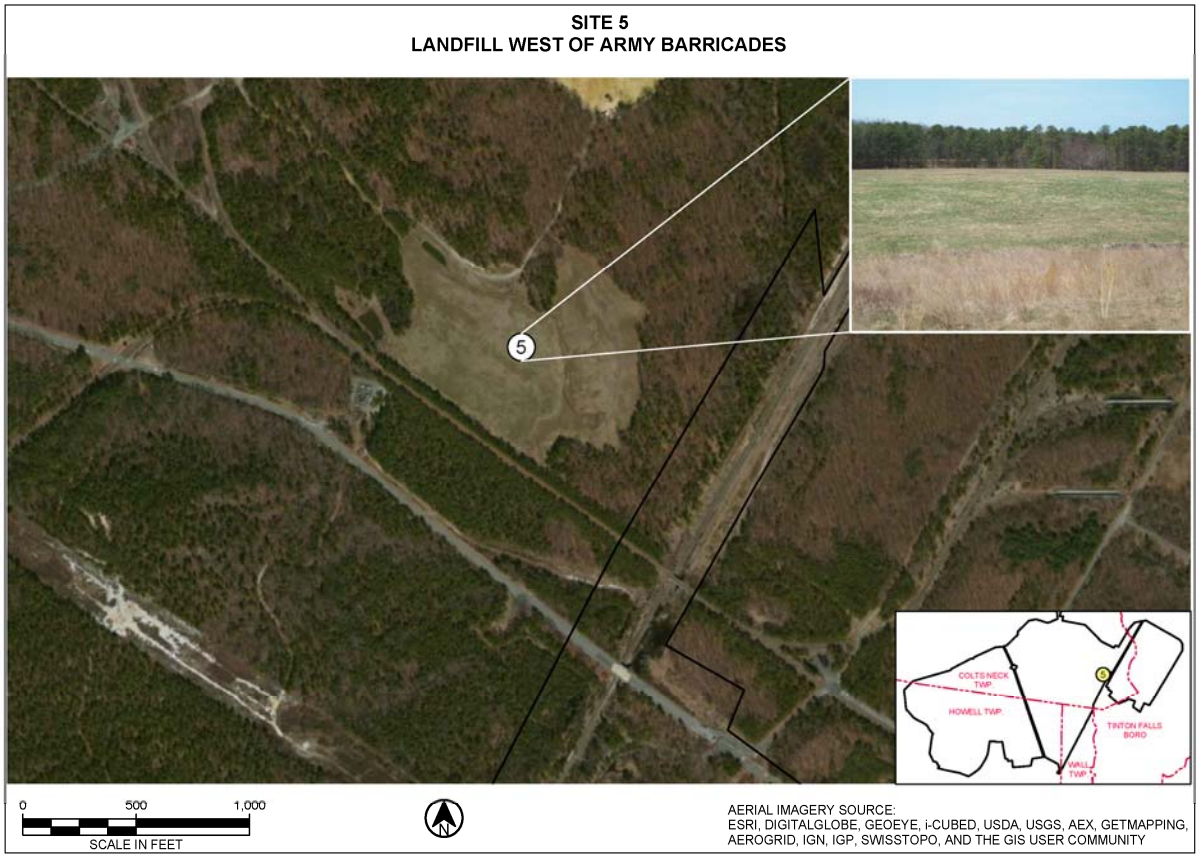
The Landfill West of Army Barricades site is an approximately 13-acre site that received approximately 6,600 tons of mixed domestic and industrial wastes between 1968 and 1978. The wastes were placed in pits and covered with a sand and vegetated layer. A 1-acre portion of the site was previously used as a skeet shooting range.

SITE STATUS

Low levels of solvents and metals have been detected in shallow groundwater at the landfill boundaries. After significant investigation, no concentrated source area of solvents could be identified. HydroPunch samples collected during the 1995 Remedial Investigation field investigation did not detect any lateral migration of the solvents beyond the extent of existing monitoring wells.

The Record of Decision for Site 5 was signed in August 1997. The selected remedy components included regrading and capping the landfill, prohibiting use of groundwater in the adjacent area, and long-term periodic monitoring of groundwater conditions.

Construction of the landfill cap was completed in July 1998. As part of the project, the skeet range was closed and lead-impacted soils from the shot fall area were disposed of off-site. The Navy conducts post remediation groundwater monitoring on an annual basis. The Third Five-Year Review Report was completed in March 2013. Because site-related COCs remain in groundwater at concentrations above NJDEP groundwater quality standards, continued monitoring and reporting are required.



SITE 6 (OU9): LANDFILL WEST OF NORMANDY ROAD

SITE HISTORY

Site 6 is a 4-acre landfill in the waterfront area. From 1943 to 1965, refuse from waterfront area operations were disposed here and subsequently burned and covered with soil. An estimated 2,500 tons of waste were deposited annually at the landfill.

SITE STATUS

Low levels of several metals were found in site soils and groundwater. Solvents and pesticides were also detected at very low levels (near instrument detection limits). The site is significant because of an adjacent tidal marsh and close proximity to Sandy Hook Bay. Additional surface water and sediment samples collected in the marsh concluded that there has been minimal impact to the marsh.

Landfill surface stabilization work at Site 6 was completed in 1999. The work included delineation of adjacent wetlands to determine boundaries for the stabilization, clearing and removal of brush and trees, placement of additional soil cover, and grading and seeding of the area to stabilize the northern slope of the site. A Feasibility Study was completed in November 2003 and the Proposed Plan was finalized in September 2004. The Record of Decision was signed by Navy and the EPA in September 2007. The selected remedy includes long-term monitoring and institutional controls to limit exposures to site risks. Groundwater sampling was conducted in December 2011 and May 2012. A restriction on the use of untreated groundwater for drinking water will be incorporated into the Base Master Plan. The groundwater use restriction will stay in place until natural processes have reduced contaminant concentrations to acceptable levels (NJDEP groundwater quality standards). A draft Classification Exception Area Documentation Report was submitted to NJDEP and EPA in January 2013 and is currently under review. Site 6 was included in the Third Five-Year Review, which was completed in March 2013.

SITE 6
LANDFILL WEST OF NORMANDY ROAD

0 500 1,000
SCALE IN FEET

N

AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 7 (OU10): LANDFILL SOUTH OF "P" BARRICADES

SITE HISTORY

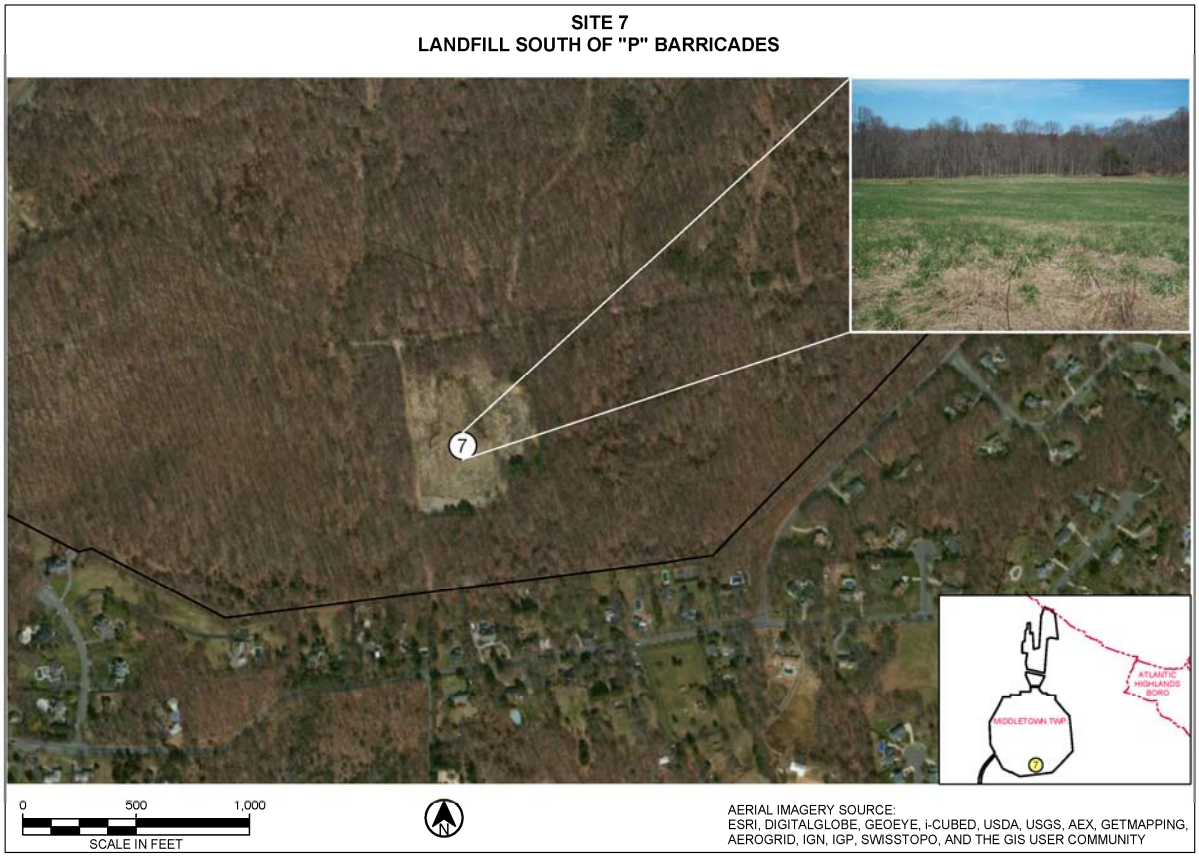
Site 7 is a 5-acre site in the Waterfront Chapel Hill area that was used from 1965 to 1977 for disposal of municipal-type solid waste and waste from Waterfront operations. In 2011, the Navy regarded the landfill surface, placed additional soil cover, and established a uniform vegetative cover. The site is surrounded by woodlands and wetlands.

SITE STATUS

Low levels of several solvents, metals, and pesticides were detected in on-site monitoring wells during the initial environmental investigations. The Navy conducted a groundwater discrete-interval sampling investigation in July 2009. Based on this investigation, no organic compounds were detected in site groundwater at concentrations above NJDEP groundwater quality standards or EPA Maximum Contaminant Levels.

The Feasibility Study for Site 7 was completed in July 2008. The Proposed Remedial Action Plan was issued in August 2010 and the Site 7 Record of Decision was finalized by the Navy and EPA in November 2010. Based on the baseline human health risk assessment, the ecological risk assessment, the April 2005 and July 2009 groundwater sampling events, and the current and reasonably anticipated future use of the site, no CERCLA remedial action was warranted for Site 7.

No further action is planned or necessary.



SITE 8: LANDFILL EAST OF BUILDING S-186

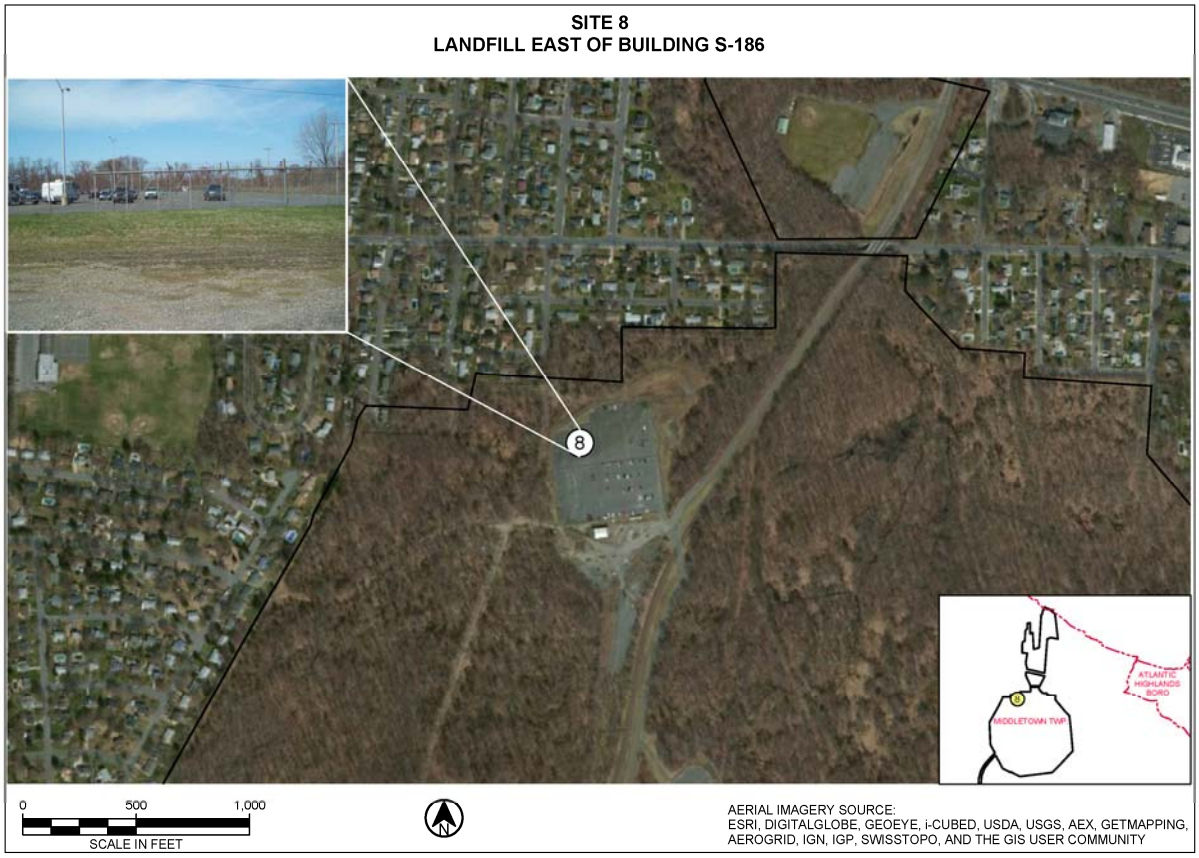
SITE HISTORY

Site 8 is an approximately 1-acre site located within the Waterfront area, which was reportedly used from 1943 to 1972 for dunnage (lumber) burning and disposal.

SITE STATUS

A site-specific Site Investigation was completed in October 1991. Based on analytical results from soil samples collected during the 1991 investigation it was concluded that no further action was warranted. The EPA and NJDEP concurred with the Navy's recommendation of no further action. A parking lot has been built on this site.

No further action is planned or necessary.



SITE 9: LANDFILL SOUTHEAST OF "P" BARRICADES

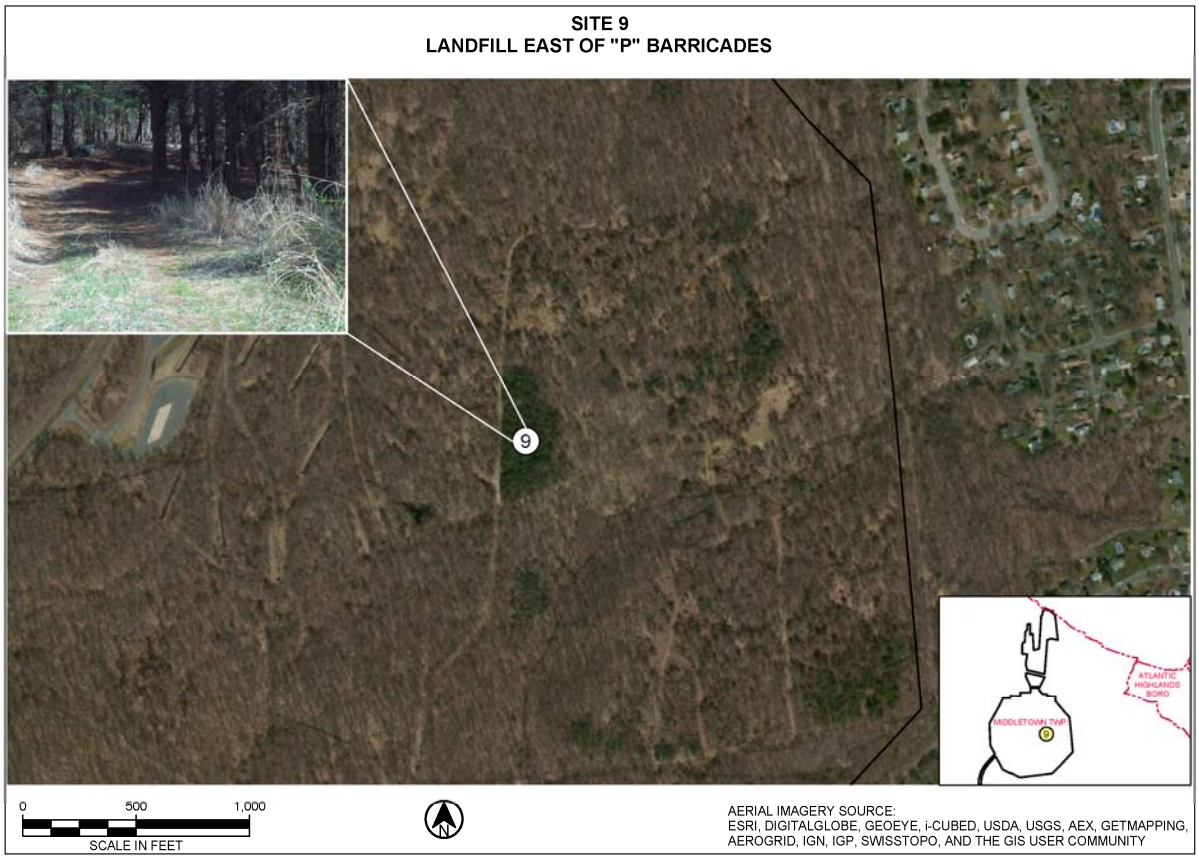
SITE HISTORY

Site 9 is a 3-acre site located in the Waterfront area that was used by the Navy from 1967 to 1972 for the disposal and burning of dunnage (lumber). An estimated 4,500 to 7,500 cubic yards of lumber was disposed during this period. Pine tree reforestation was completed on the site in the 1970s.

SITE STATUS

Low levels of pesticides, metals, and cyanide were found in soils located within the site, but the surrounding area appears to be unaffected. Two additional test pits were dug at the northern landfill boundary during the 1995 Remedial Investigation field investigation to examine site soils. A nearby spring and stream were also sampled. Several metals were present in surface water and sediments, but these may not be related to the site. Extensive remedial activity does not appear to be warranted and would disrupt the natural ecological succession occurring on the site.

In February 2013, the Navy completed a baseline human health risk assessment for Site 9; an ecological screening level assessment was completed in June 2011. The draft final Feasibility Study was submitted to EPA and NJDEP in April 2013. EPA approved the Site 9 Feasibility Study in July 2013.



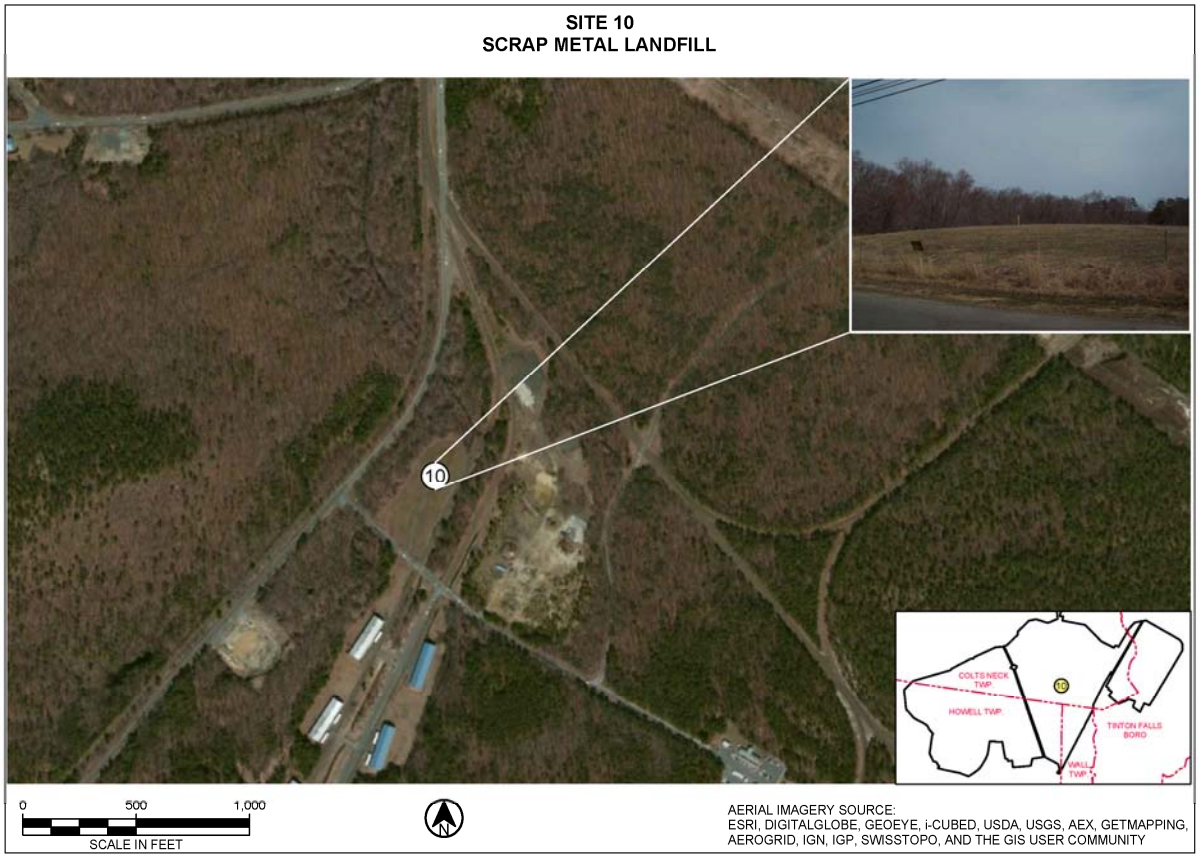
SITE 10 (OU6): SCRAP METAL LANDFILL

SITE HISTORY

Site 10 is a 2-acre site located at the intersection of Munda and Midway Roads within the Mainside Area, which was used for disposal of demilitarized (inert) munitions, empty cases, and paint chips from 1953 to 1965.

SITE STATUS

A Feasibility Study, Proposed Plan and Record of Decision (August 2006) have been completed for this site. Site grading and capping (in accordance with the Presumptive Remedy for CERCLA Municipal Landfill Sites), fencing and signage, land use controls, and long-term groundwater monitoring were the components of the selected remedy. Grading and capping were completed in June 2003. The Navy conducts post remediation groundwater monitoring on an annual basis. Aluminum and iron have been historically detected in site groundwater at concentrations above their respective NJDEP groundwater quality standards. Site 10 was included in the Third Five-Year Review that was completed in March 2013. A Technical Memorandum summarizing the historical monitoring activities at Site 10 was submitted to the EPA and NJDEP in May 2013.



SITE 11 (OU8): CONTRACT ORDNANCE DISPOSAL AREA

SITE HISTORY

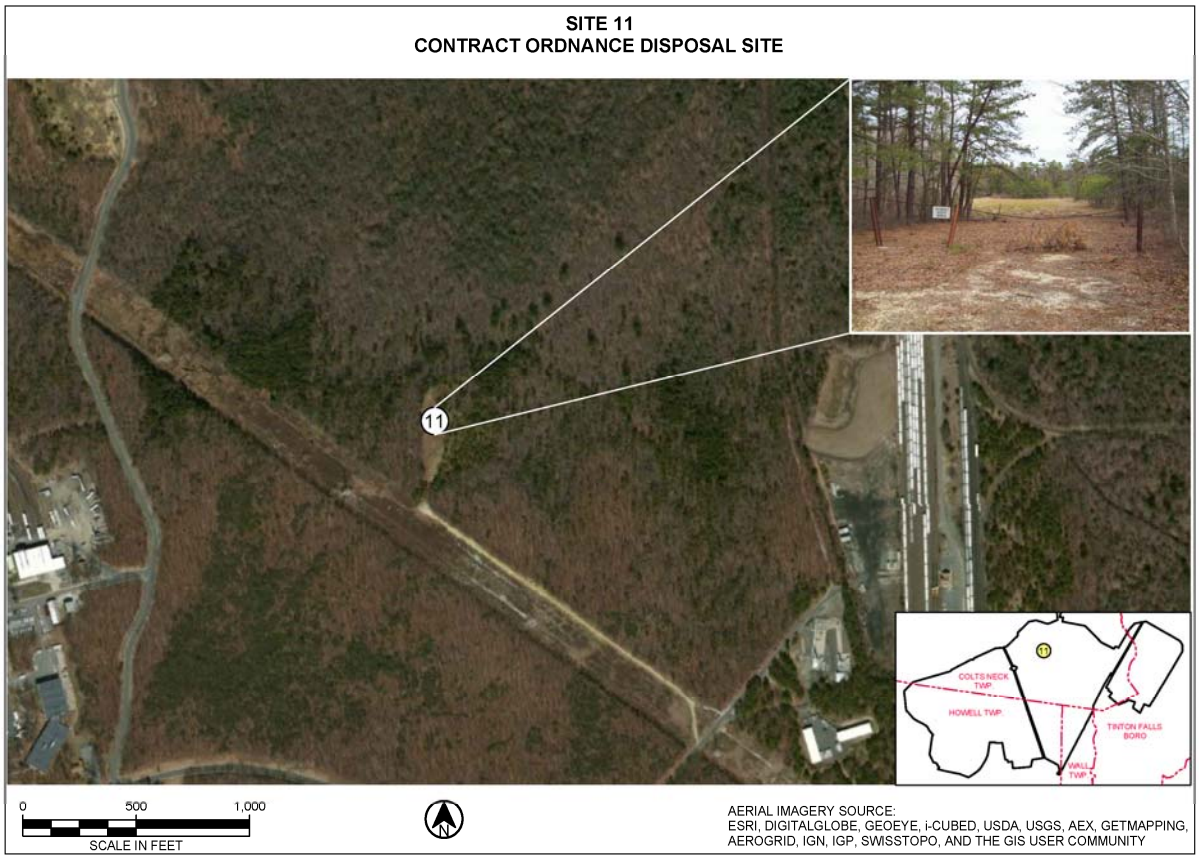
Site 11 is a 2-acre site within the Mainside Area that was used for several years by contractors for burning of obsolete ordnance. The site was also used for fire-fighting training from 1974 to 1977. This site is significant due to the presence of Knieskern's Beaked Rush, an endangered plant species.

SITE STATUS

Some low-level hydrocarbon residues are present in site soils, but no explosive compounds have been detected. Solvents found in one round of groundwater analyses were later confirmed to be attributable to laboratory contamination.

Remediation of soils at this site is considered undesirable since it would likely interfere with propagation of the endangered plant species. The Knieskern's Beaked Rush is mowed annually to facilitate propagation of the species.

A no further action Record of Decision was signed in September 2004 for Site 11. Based on this, no further action or future monitoring is warranted at Site 11.



SITE 12 (OU9): BATTERY ACID SPILL SITE

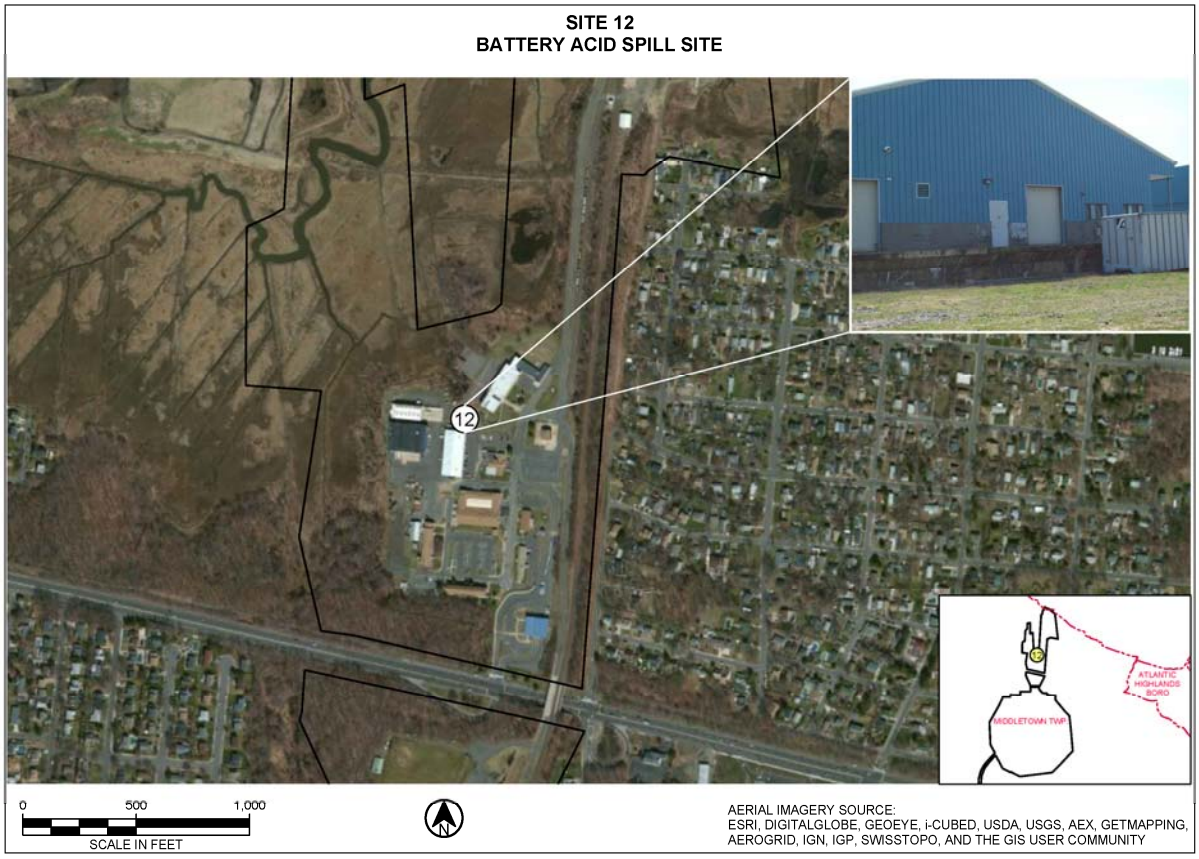
SITE HISTORY

Site 12 was a small paved area next to the loading dock east of Building R-10 in the Waterfront Area. The site was used as a temporary staging area for used forklift batteries being sent off site. An unknown amount of electrolyte was disposed at the site.

SITE STATUS

Elevated lead levels were found in sediment and surface water samples collected from a nearby storm drain. Additional soil samples were collected in 1995 near the site and the Site 6 marsh investigation included samples near the storm drain discharge point. The soil samples identified a small source area with relatively high lead levels. Subsurface concentrations were much lower. Samples from the adjacent marsh did not identify any significant impact.

Foster Wheeler Environmental Corporation, on behalf of the Navy, conducted soil excavation activities in 1999. The site was subsequently backfilled with clean fill and graded. A no further action Record of Decision was signed by the Navy and EPA in September 2007. The previous excavation of contaminated soils achieved the remediation goal for protection of human health and the environment, including prevention of human exposure to contaminated surface and subsurface soils (which were removed and disposed off-site) and migration of contaminants to the adjacent marsh.



SITE 13 (OU5): DEFENSE PROPERTY DISPOSAL OFFICE YARD

SITE HISTORY

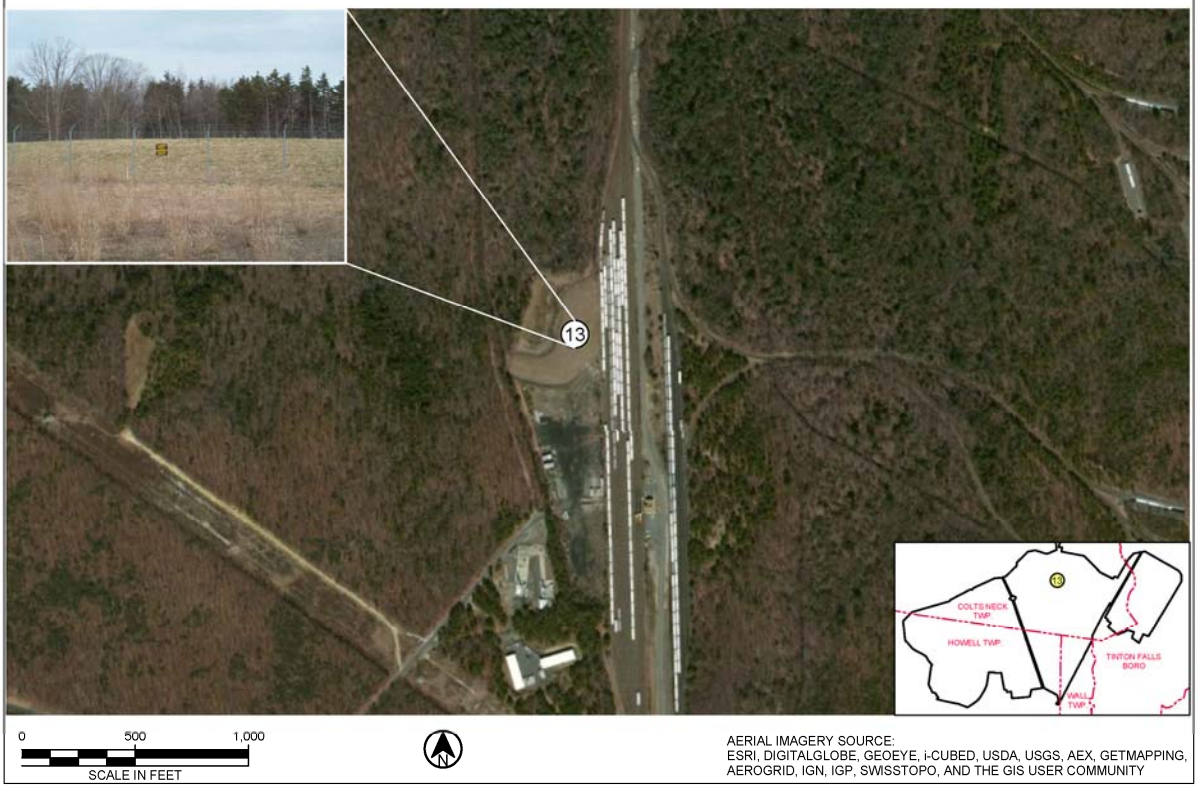
Site 13 was an approximately 1.7 acre area of fill material that extended into a marsh near the rail classification yards north of the Defense Property Disposal Office yard in the Mainside Area. This 4,000 cubic yard landfill was used for storage of various items including scrap metal, forklift batteries, and transformers. Some of these items were buried at the northern end of the site between 1960 and 1983. In the summer of 1997, NWS Earle public works employees performed a partial removal of exposed debris.

SITE STATUS

Metals and polychlorinated biphenyls were detected in site soils. Additional test pits were dug to determine the extent of the filled area and samples were collected from nearby wetlands to determine if they had been impacted. Groundwater wells were installed near the landfill boundary. Several organic compounds were detected in the initial groundwater samples, so further sampling was conducted to determine lateral and vertical migration. This additional sampling concluded that migration has been minimal.

In July 2004, the OU5 Record of Decision was signed by the Navy and EPA and in agreement with NJDEP. The Selected Remedy is an engineered low-permeability cover system that meets RCRA criteria for municipal solid waste landfills. The Navy, in accordance with Department of Defense guidelines, also implemented land use controls for this site. A restriction was incorporated into the Base Master Plan to limit future uses of the site to prevent disturbance of the landfill cover system or direct contact with contaminated media such as landfill contents and groundwater, to prevent residential development of the site, and to prohibit groundwater use. The final remedy was completed and inspected in October 2005. The Navy conducts post remediation groundwater monitoring on an annual basis. Several inorganics and organic COCs have been detected in site groundwater at concentrations above their respective NJDEP groundwater quality standards. Site 13 was included in the Third Five-Year Review that was completed in March 2013. A revised groundwater Classification Exception Area documentation report was submitted to NJDEP in June 2013.

SITE 13
DEFENSE PROPERTY DISPOSAL OFFICE (DPDO) YARD



0 500 1,000
SCALE IN FEET

N

AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 14 (OU4): DEFENSE PROPERTY DISPOSAL OFFICE WAREHOUSE

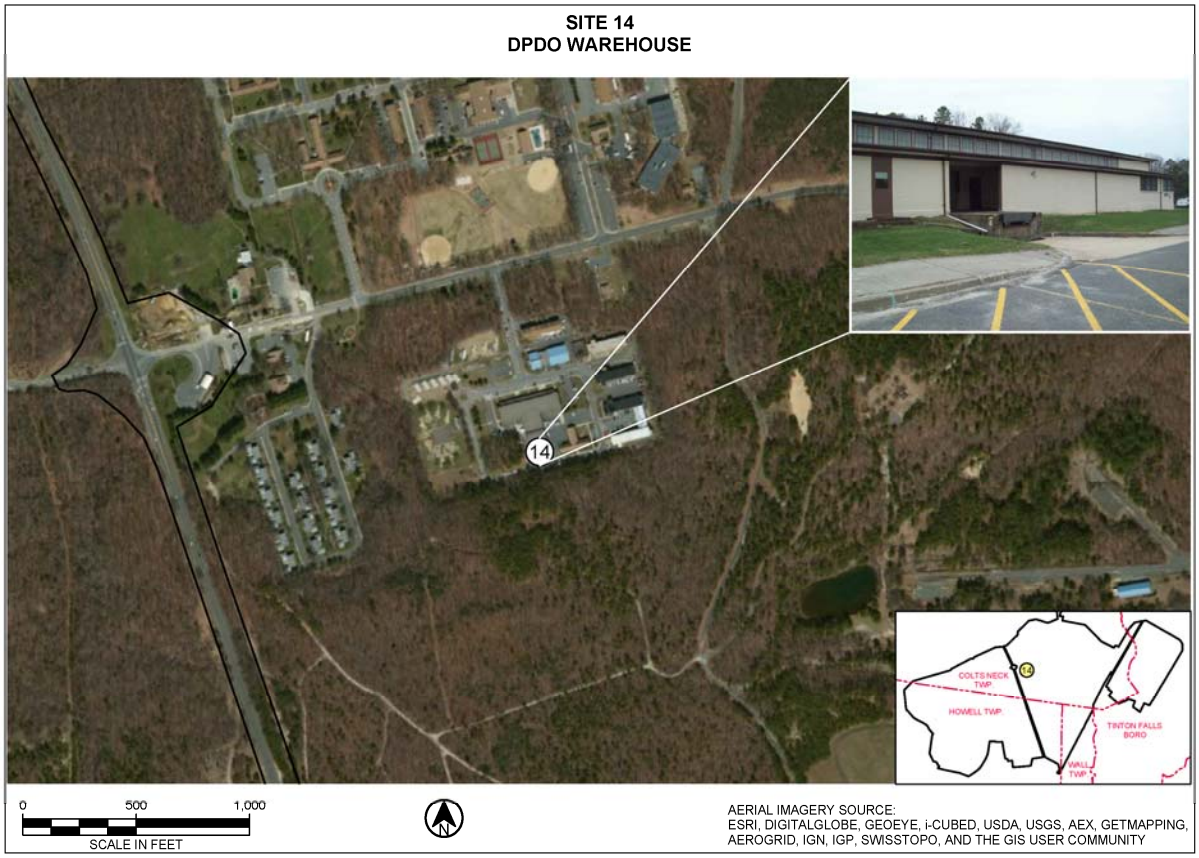
SITE HISTORY

The Defense Property Disposal Office Warehouse (Building C-33) is a 16,000 square foot storage building for items waiting to be processed. A mercury spill of one to several ounces occurred in 1970. The exact location of the spill was not determined. Interviews indicated that the mercury was cleaned up by vacuuming.

SITE STATUS

Initial investigations were limited to interviews with long-term employees to try to pinpoint the spill area. Since the exact location could not be identified, the Navy tested floor sweepings in 1995 to look for any residual mercury. Results were below the NJDEP residential direct contact soil cleanup criterion. Based on the Remedial Investigation sampling results, no evidence of wider environmental contamination or risk to human health was found.

Based on confirmation sampling following the removal action, no further action was the selected remedy for Site 14. The Record of Decision for OU4 was signed by the Navy and EPA in September 1999.



SITE 15 (OU9): SLUDGE DISPOSAL AREA

SITE HISTORY

Site 15 is located in a wooded area near a small drainage swale, approximately 1-acre in size and along former railroad tracks, which is located just west of the main entrance gate to the Waterfront Area. Site 15 is where an unknown quantity of oily bilge sludge was disposed in the early 1970s. The exact location of the sludge disposal activities was not apparent during site inspections.

SITE STATUS

Small quantities of organic compounds were found in soils and sediments but not in groundwater. Additional soil, sediment, and surface water samples determined the impacted area was minimal and no discrete source area was identified. Samples collected from a downgradient marsh, to observe the cumulative impact of the waterfront sites, showed minimal impact.

A Feasibility Study for Site 15 was finalized in November 2003 and a Proposed Plan was finalized in September 2004. The OU9 Record of Decision was signed by the Navy and EPA in September 2007. The Navy proposed long-term monitoring and institutional controls to limit exposure to site risks as the site remedy. Fencing and signage, in place around the perimeter of the site, provide notification and limit access to the site. Access restrictions will also be placed in the Base Master Plan to limit future uses that may result in direct contact with contaminated soil. Arsenic and cadmium have been identified as soil COCs.

Long-term periodic monitoring and five-year reviews will assess the status of any soil contaminants and potential threats to human health and the environment. Site 15 was included in the Third Five-Year Review, which was completed in March 2013. Since waste constituents will remain in place, five-year reviews will be conducted until soil cleanup criteria are achieved.

SITE 15
SLUDGE DISPOSAL AREA

0 500 1,000
SCALE IN FEET

N

AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 16/F: DIESEL FUEL LINE TO BUILDING C-50/ROUNDHOUSE AREA

Site 16/F is the entire railroad maintenance yard located in the Mainside area that has been active since the late 1940s and encompasses Site 16 and EPIC Site F.

SITE HISTORY

SITE 16: DIESEL FUEL LINE TO BUILDING C-50

Site 16 is located northwest of Building C-19 and addresses the leakage from an underground fuel line, which occurred in June 1977 and was used to transport diesel fuel from underground storage tanks (USTs) located next to Building C-20 to a dispensing station located approximately 100 feet north/northwest of Building C-50. The line was excavated at that time and was determined to have leaked about 50 gallons of fuel. The USTs originally located adjacent to Building C-20 were removed. Site 16 is located within the approximate outline of EPIC Site F (see below), and the sites are now referred to as Site 16/F.

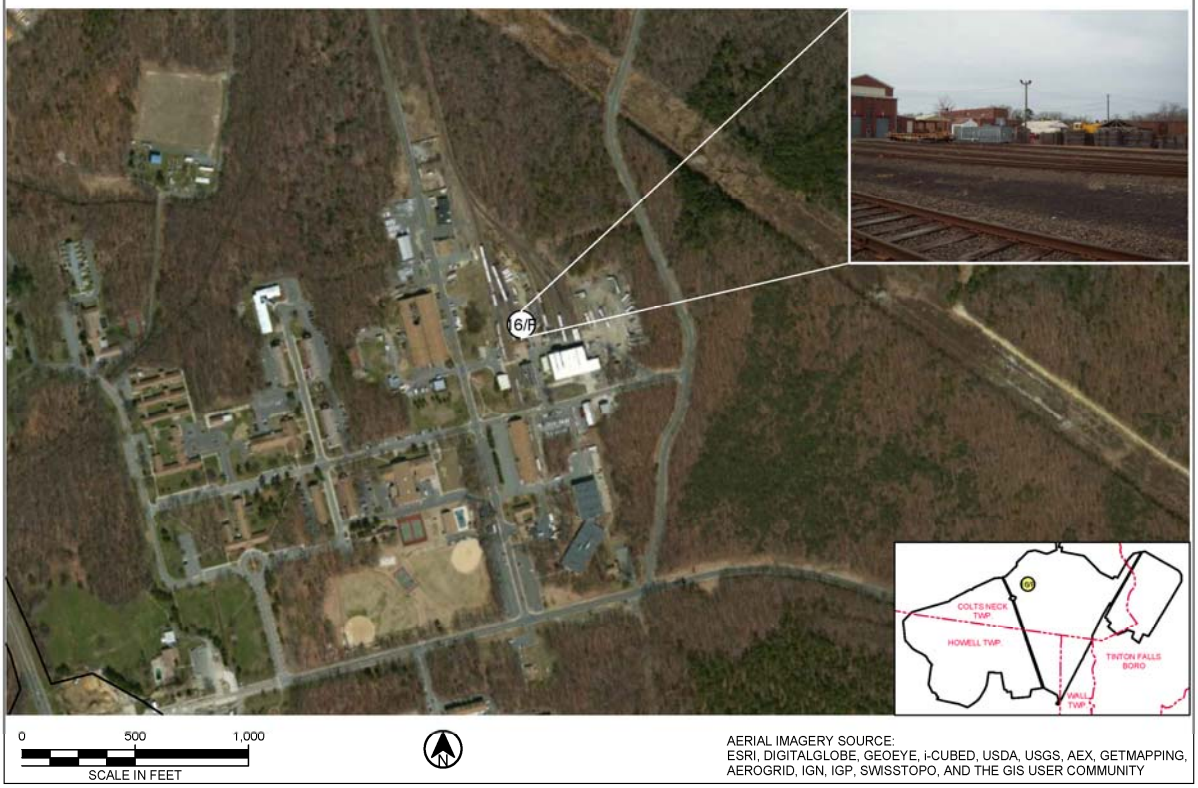
EPIC SITE F: C-50 ROUNDHOUSE AREA

EPIC Site F was identified during an analysis performed for EPA at the Environmental Monitoring Systems Laboratory, Las Vegas, Nevada (i.e., EPIC Study). EPIC Site F includes two former diesel tank areas around Building C-50, an oil water separator and a leach field east of Building C-50, a solvent leach field northwest of Building C-50, and a locomotive wash area north of Building C-19. Investigations at these areas have been concerned with petroleum hydrocarbons and solvent contamination of soil, groundwater, surface water, and sediment.

SITE STATUS

Sampling during the Site Investigation of 1992 found hydrocarbon contamination area-wide in the soils at Site 16. It was thought this could be attributed to site usage as a rail yard. An extensive soil gas survey was conducted in 1995 across Site 16/F to determine any "hot spots" and to pick appropriate locations for monitoring wells. This investigation led to the discovery of a large concentration of free-product diesel fuel on top of the shallow groundwater. A pilot scale bioslurper system was installed in 1996 to determine whether the free-product fuel could be recovered. Elevated iron concentrations in the shallow groundwater interfered with the recovery operation, but system modifications overcame this problem. A large-scale system was designed in 1997 and was operated from February 1998 through May 1999. Approximately 5000 gallons of diesel fuel has been recovered using the bioslurper process. An Optimization Study was performed in June 2004 and additional wells were installed for free product removal. The bioslurper system is currently operating and routine groundwater monitoring is conducted in accordance with NJDEP UST regulations. In August 2012, at the request of the NJDEP, the Navy submitted a draft Tier II Sampling and Analysis Plan for a vapor intrusion groundwater investigation at Site 16/F. The sampling plan is currently being reviewed by NJDEP.

SITE 16/F
DIESEL FUEL LINE TO BUILDING C-50 ROUNDHOUSE AREA



0 500 1,000
SCALE IN FEET

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AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 17 (OU9): DISPOSAL SITE BEHIND TRAINING BARGE

SITE HISTORY

An approximately 3-acre former landfill located adjacent to a tidal marsh in the Waterfront area, the site contains assorted construction debris and heavy equipment from previous disposal activities. Site 17 is composed of two irregular shaped areas.

The close proximity of the marsh was considered during site investigations. Samples were collected in the marsh and from any locations where water was observed seeping out of the landfill site or where there was evidence of previous seepage. Several compounds were detected above ecological screening levels at the toe of the fill area. These compounds were not detected in samples collected further out into the marsh.

Groundwater sampling was conducted as part of the 1996 Remedial Investigation and in 2011 and 2012.

SITE STATUS

A Feasibility Study was completed in November 2003 for the Site 17 and the Proposed Plan was finalized in September 2004. The Record of Decision for OU9 was signed by the Navy and EPA in September 2007. The selected remedy includes long-term monitoring and institutional controls to limit exposure to site risks. One portion of the former landfill surface is covered with gravel for use as a parking area by Navy personnel. The second portion of the landfill extends into the adjacent marsh, beyond a wooden barricade and base perimeter fencing. Fencing is in place around the parking area and along the facility perimeter.

Long-term periodic groundwater monitoring is conducted to assess contaminant status and potential threats to human health and the environment. Since landfill constituents will remain, site conditions and risks will be reviewed every five years. A groundwater Classification Exception Area pursuant to NJDEP regulations was included in the selected remedy. In January 2013, a Groundwater Sampling Report for the December 2011 and May 2012 Sampling Events was submitted to EPA and NJDEP. Site 17 was included in the March 2013 Third Five-Year Review.

SITE 17
DISPOSAL SITE BEHIND TRAINING BARGE

SITE 18: DEMILITARIZATION FURNACE

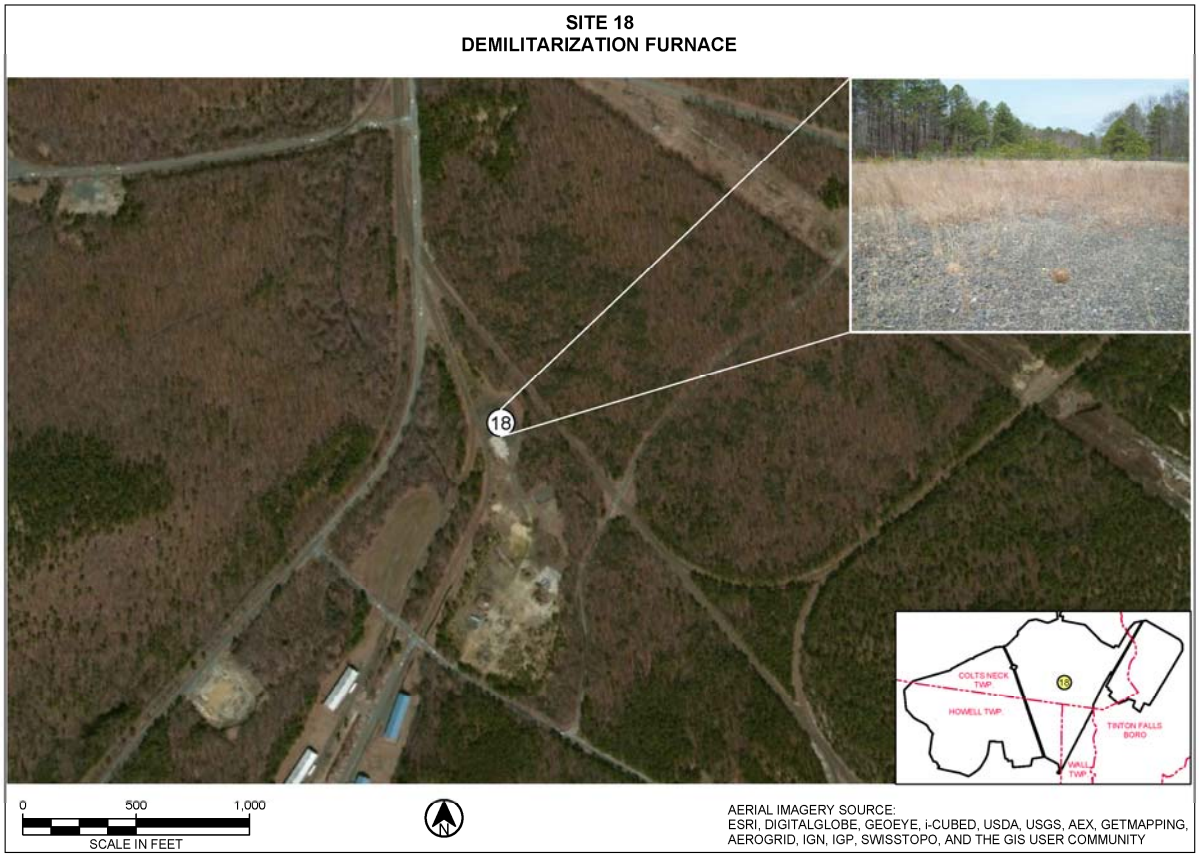
SITE HISTORY

Site 18 is located within the Mainside Area and included a rotary furnace that was used by the Navy from 1978 to 1989 to demilitarize small caliber (up to 40 millimeters) ammunition by burning. The furnace was regulated under RCRA as a hazardous waste incinerator.

SITE STATUS

As outlined in the February 1983 Initial Assessment Study, the waste area at Site 18 consisted of about 50 square feet of soil that was contaminated by metal fragments dropping off the furnace discharge conveyor. The fragments of metal chips were in such a form that the metals (typically iron and copper) were inert and as such did not pose a threat to human health or the environment.

In April 1991, the Navy submitted to NJDEP a closure plan for the site. A plan for soil sampling was also submitted and implemented by the Navy. RCRA closure certification documents were submitted to NJDEP in October 1995. The Closure Report was approved by NJDEP in November 1995.



SITE 19 (OU2): PAINT CHIP AND SLUDGE DISPOSAL AREA

SITE HISTORY

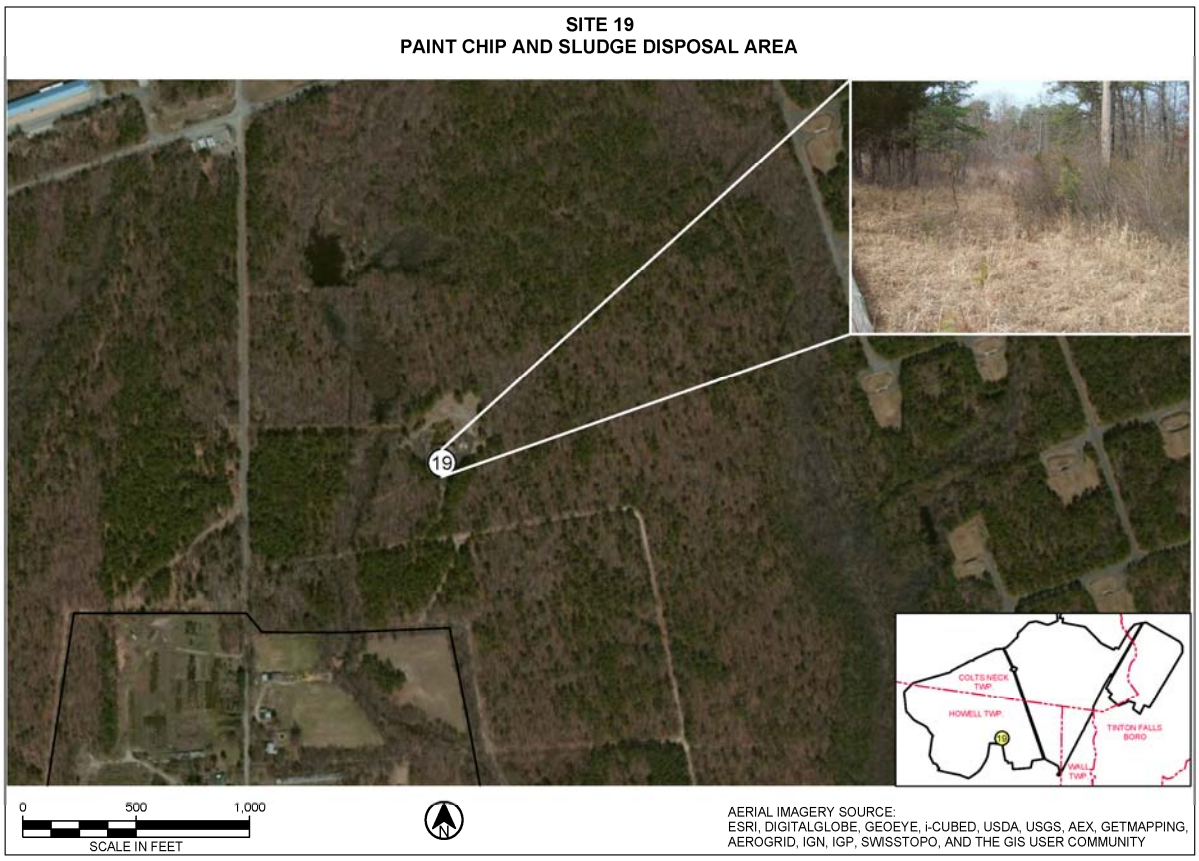
Site 19 is a 300-foot circular area near former Building S-34 that was used from the early 1940s until the early 1960s to dispose of paint chips and sludge from maintenance operations. A 50-foot diameter depression and an open drainage swale make up the two remediated areas of the site. A paved portion of this site is now used for forklift driver training.

SITE STATUS

Elevated levels of several metals were found in the soils in the on-site surface depression and the drainage ditch leading away from it. Subsurface soil samples determined concentrations decreased rapidly with depth. Monitoring wells showed slightly elevated levels of metals in site groundwater.

The OU2 Record of Decision for remediation of this site was signed in August 1997. The selected remedy consisted of the excavation of impacted soils from the surface depression and open drainage swale, backfilling the areas with clean soil, paving of the filled surface depression, prohibition of groundwater usage in the adjacent area, and long-term periodic monitoring of groundwater, surface water, and sediment.

The Remedial Action was completed in 1998 and the Navy currently conducts long-term monitoring on an annual basis. Based on the historical monitoring results, the Navy submitted documentation for establishment of a groundwater Classification Exception Area in April 2012. A Technical Memorandum responding to NJDEP comments was prepared and submitted in March 2013. Site 19 was included in the Third Five-Year Review which was finalized in March 2013.



SITE 20 (OU4): GRIT BLAST DISPOSAL SITE NEAR BUILDING 544

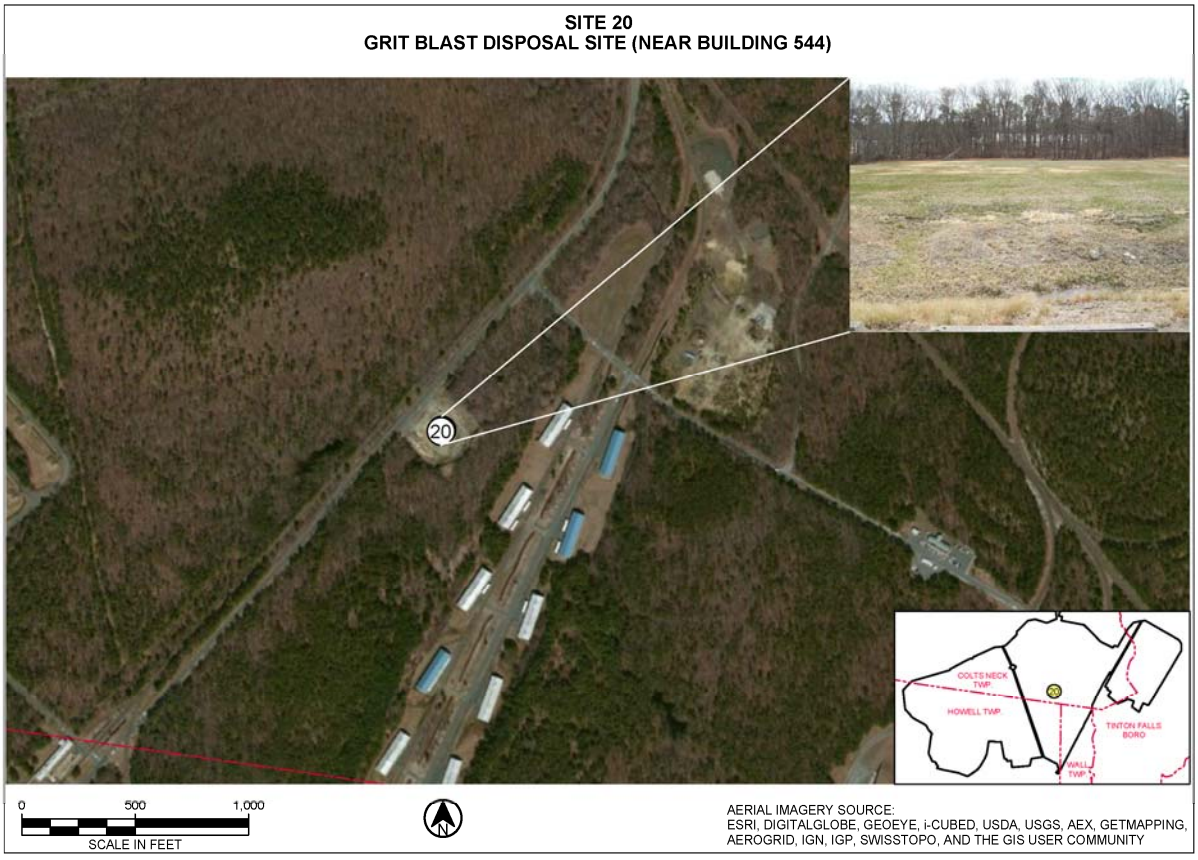
SITE HISTORY

Site 20 consisted of a spent sand blasting grit pile and a surrounding shallow drainage area behind Building 544 along Midway Road within the Mainside Area of NWS Earle. Building 544 was demolished and removed by the Navy in 2010.

SITE STATUS

Metals were detected in the soils and sediments at the site. An interim removal action was conducted in December 1994 to remove the grit pile and visibly impacted soils. A drawing review in preparation for the removal action found an underground leach field, which was studied during the 1995 Remedial Investigation field investigation. Soil borings were taken in the area of the leach field and in nearby wetlands. Confirmatory soil samples were also taken in the excavated areas to confirm the removal.

Based on confirmation sampling following the removal action, no further action is planned for this site under current and planned land use. The OU4 Record of Decision was signed by EPA and the Navy in September 1999 and outlined institutional controls (in the form of land use restrictions) and five-year reviews as the selected remedy because beryllium was present in soil at levels above NJDEP residential soil cleanup criteria. A notation was made to the NWS Earle Base Master Plan indicating that further measures would be required prior to committing the site to unrestricted (residential) use. Site 20 was included in the March 2013 Third Five-Year Review. As noted in the Third Five-Year Review, the NJDEP Residential Direct Contact Soil Remediation Standard for beryllium was revised. Results from the post-removal confirmation sampling are now below the revised soil remediation standard.



SITE 21: BAGHOUSE & CYCLONE DUST STORAGE NEAR BUILDING S-589

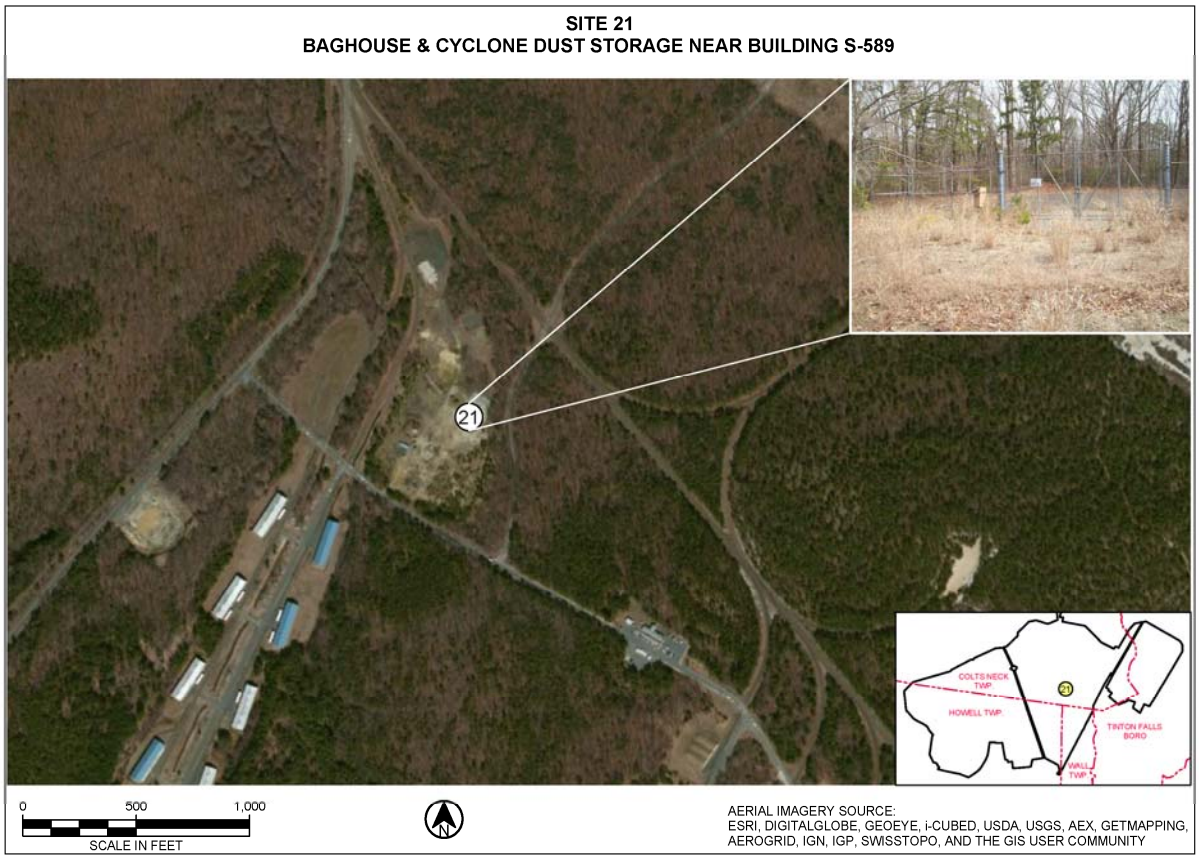
SITE HISTORY

Located within the Mainside Area, Site 21 was previously a RCRA permitted hazardous waste storage area that was used for the storage of dust recovered from the air pollution control equipment on the demilitarization furnace (Site 8). The furnace and associated storage area were operated by the Navy from 1978 to 1989. Additional containerized solid hazardous wastes were periodically stored at the site until December 1998.

SITE STATUS

The 1983 Initial Assessment Study indicated that some of the baghouse and cyclone dusts were spilled onto the soil surrounding the drummed wastes. The site was paved over to eliminate water infiltration and subsequent movement of any metals present in the soil.

Site 21 (referred to as "the DEMIL Storage Pad") is no longer used as a permitted hazardous waste storage area. The site has undergone closure per RCRA regulations and waste materials are no longer stored at this location. A new state-of-the-art hazardous waste storage facility was constructed by the Navy in 1998.



SITE 22 (OU4): PAINT SLUDGE DISPOSAL SITE (BUILDING D-2)

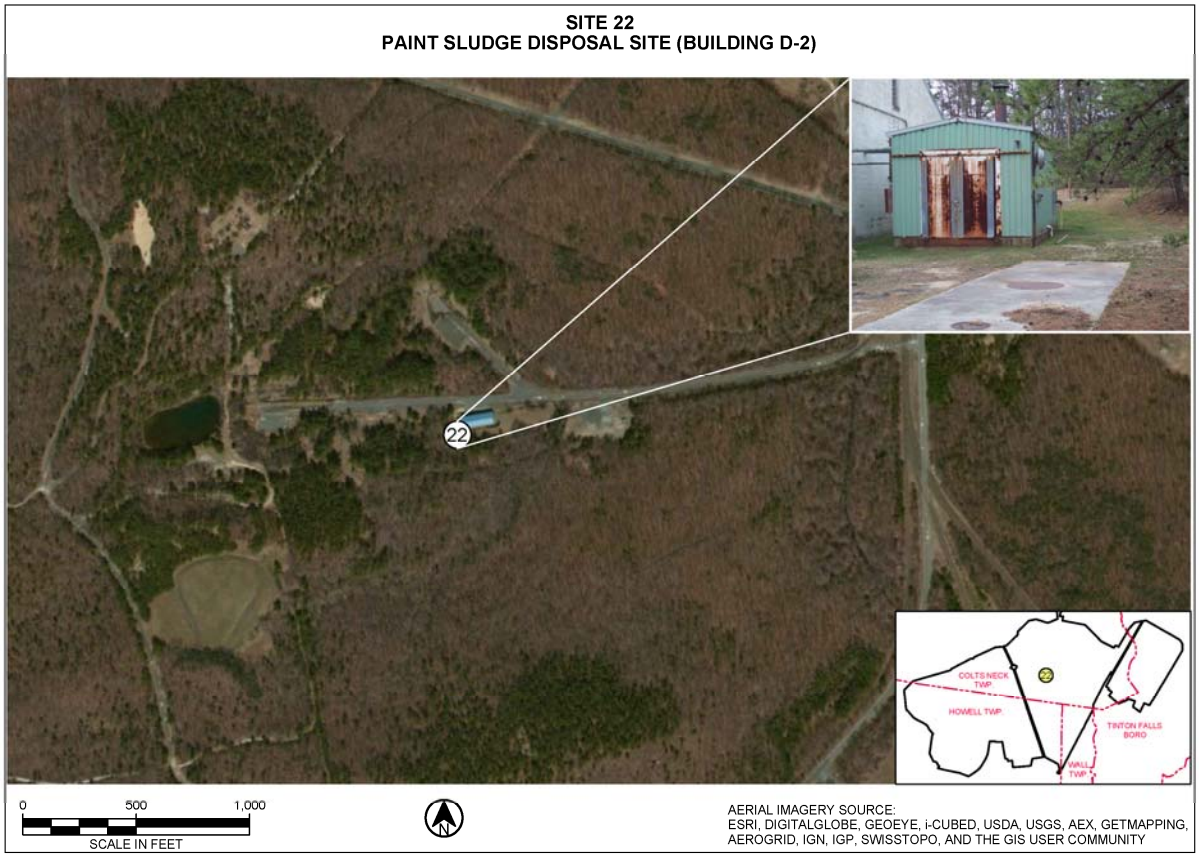
SITE HISTORY

Site 22 is a former paint chip disposal area where waste sand blasting material and paint wastes were disposed. The site is located south of Mainside Area Building D-2 and consisted of an approximately 50 square foot area of stressed vegetation and discolored soils.

SITE STATUS

Contamination was found in site soils and a shallow drainage area. Since soil sampling confirmed significant levels of metals and paint residues in a somewhat limited area, a removal action was conducted by the Navy in December 1996. Approximately 250 tons of contaminated soils were excavated and disposed off site.

Based on confirmation sampling following the removal action, no further action is planned for this site. The OU4 Record of Decision outlined no further remedial action at Site 22 and was signed by EPA and the Navy in September 1999.



SITE 23 (OU4): PAINT SLUDGE DISPOSAL SITE (BUILDING D-5)

SITE HISTORY

Site 23 is a small area (approximately 200 square feet) located within the Mainside Area near Building D-5 that was reportedly used from the early 1970s until approximately 1993 to dispose of paint from the repainting and stenciling of ordnance.

SITE STATUS

Elevated levels of volatile organics, lead, and chromium were detected during the 1986 SI. Three monitoring wells were drilled and additional surface water and sediment samples were collected in 1995 to define the extent of contamination. Elevated metals were detected in site groundwater; however, the samples had very high turbidity, which indicated at least some of the reported values were due to suspended solids.

Since soil sampling confirmed significant levels of metals and paint residues in a somewhat limited area, a removal action was conducted in December 1996. The EPA deemed the removal action to be satisfactory and complete in March 1997.

Based on confirmation sampling following the removal action, no further action is planned for this site under current and planned land use. The OU4 Record of Decision was signed by EPA and the Navy in September 1999 and outlined institutional controls (in the form of land use restrictions) and five-year reviews as the selected remedy because inorganics were present in soil at levels above NJDEP soil cleanup criteria. In 1999, a notation was made to the NWS Earle Base Master Plan indicating that further measures would be required prior to allowing unrestricted (residential) use. Groundwater was sampled at the site in November 2010. Based on the sampling and analytical results and comparison to current NJDEP groundwater quality standards and EPA Maximum Contaminant Levels, metal concentrations are either below the screening criteria or indicative of background conditions. No further sampling of groundwater at Site 23 is warranted. Site 23 was included in the March 2013 Third Five-Year Review.

SITE 23
PAINT SLUDGE DISPOSAL SITE (BUILDING D-5)

0 500 1,000
SCALE IN FEET

N

AERIAL IMAGERY SOURCE:
ESRI, DIGITALGLOBE, GEOEYE, i-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

SITE 24 (OU4): CLOSED PISTOL RANGE

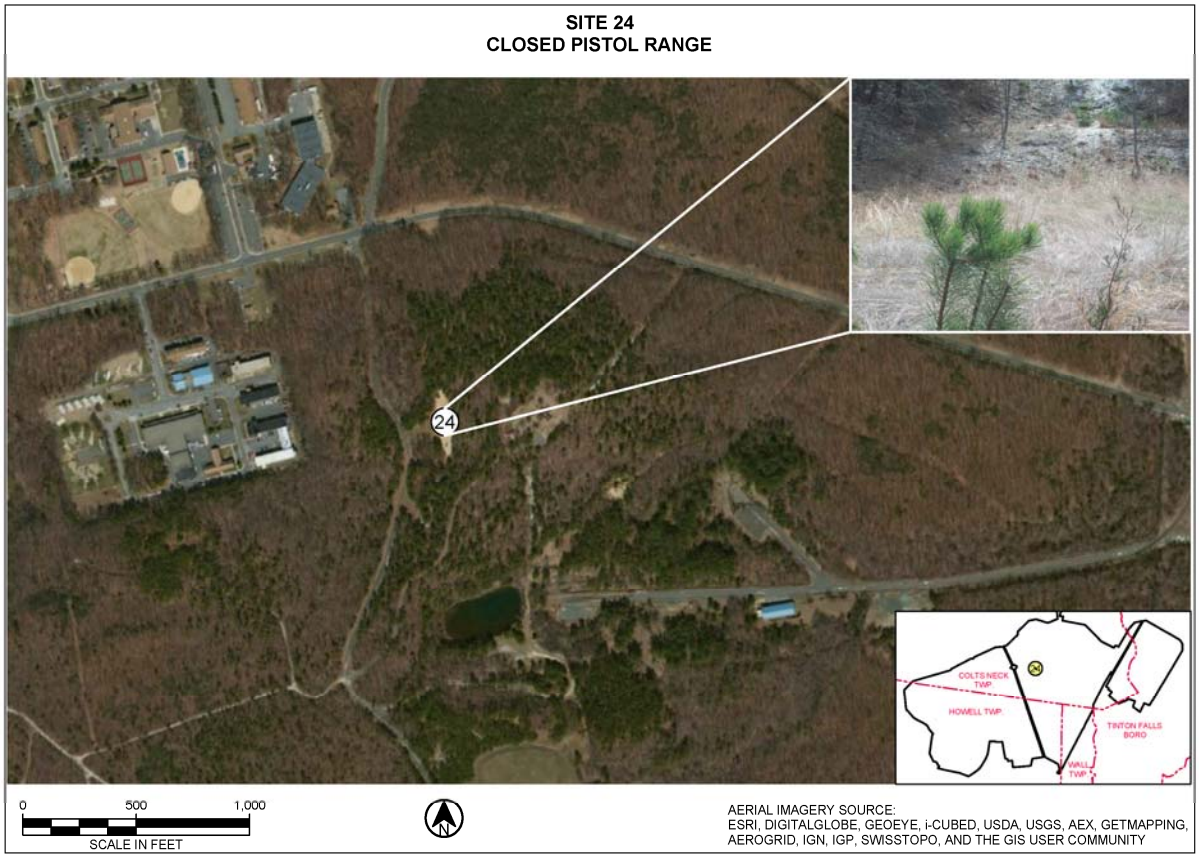
SITE HISTORY

Site 24 is a former small arms range located south of Esperance Road in the Mainside Area. A steeply sloping sand face forms the impact berm.

SITE STATUS

A significant amount of lead slugs were present in the impact berm. Sampling and analysis of subsurface soil beneath the berm determined that the lead had not migrated. A removal action was performed in 1996 to remove the slugs. The metal bullets were mechanically removed from the impact berm soil and the soil itself was washed and placed back on the site.

Based on confirmation sampling following the removal action, no further action is planned for this site. The Record of Decision for OU4 was signed by EPA and the Navy in September 1999. No further action was outlined as the selected remedy for Site 24.



SITE 25 (OU4): CLOSED PISTOL RANGE

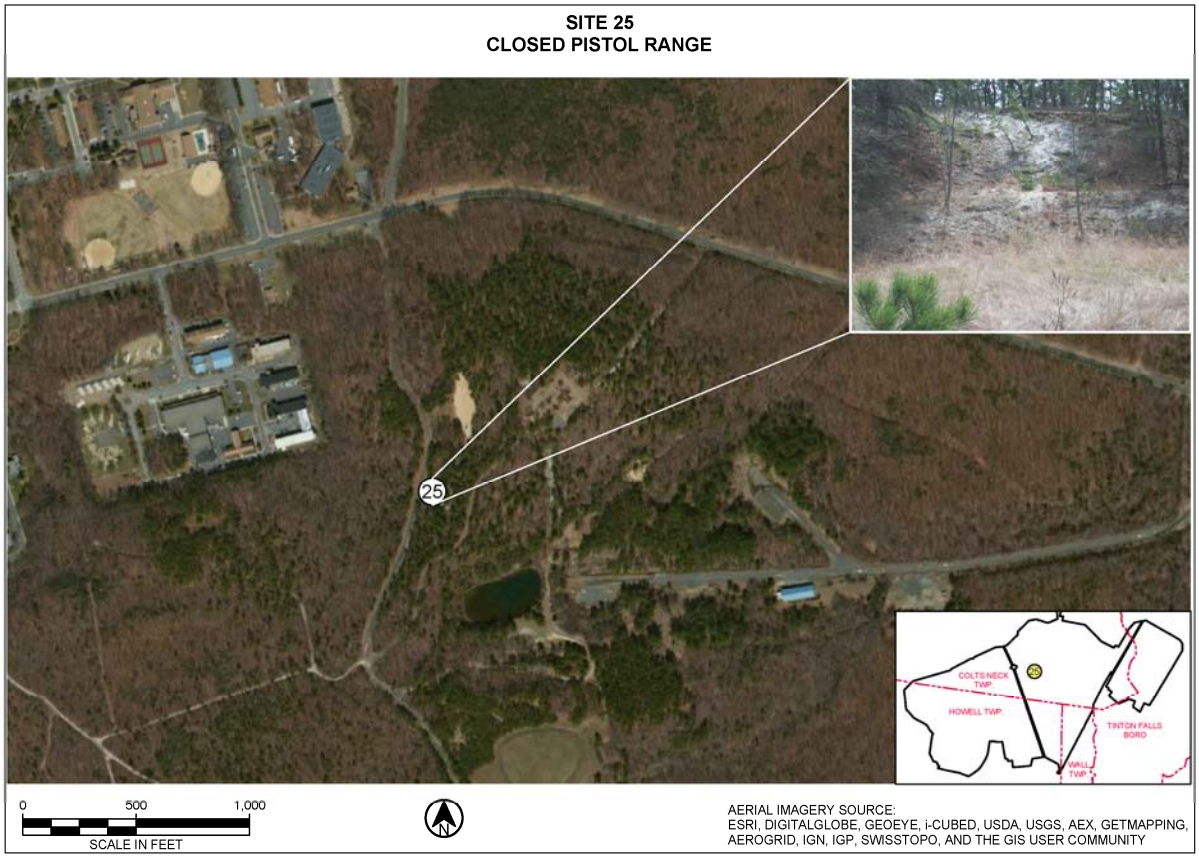
SITE HISTORY

Site 25 is a former small arms range located adjacent to Site 24 in the Mainside Area. Site 25 was of similar construction to Site 24.

SITE STATUS

A significant amount of lead slugs were present in the impact berm. Sampling and analysis of subsurface soil beneath the berm determined that the lead had not migrated. A removal action was performed in 1996 to remove the slugs. The metal bullets were mechanically removed from the impact berm soil and the soil itself was washed and placed back on the site.

Based on confirmation sampling following the removal action, no further action is planned for this site. The Record of Decision for OU4 was signed by EPA and the Navy in September 1999. No further action was outlined as the selected remedy for Site 25.



SITE 26 (OU3): EXPLOSIVE "D" WASHOUT AREA

SITE HISTORY

Site 26, which is approximately 200-feet by 200-feet in size, is located at the intersection of Macassar and Midway Roads in the Mainside Area. Ammonium picrate (known as Explosive D) was recovered from 5-inch shells for one year in the late 1960s. The water-soluble explosive was removed from the shells by a hot water wash and then cooled/settled in a tank located in Building GB-1. A process leaching system, consisting of a grease trap and a cesspool-like leach tank, north of the western end of Building GB-1 was used for process waste disposal. Additionally, Building GB-1 was reportedly used for the reconditioning of munition casings/shells. Solvents were used in the reconditioning process. Spent solvents and wash waters were discarded into an unknown receptacle, which drained to the process leaching system.

SITE STATUS

The GB-1 process leaching system appears to have been used for the disposal of trichloroethene (TCE), 1,2-dichloroethene (1,2-DCE), and related compounds.

TCE was detected in one well during a 1992 sampling event. A soil gas survey and groundwater sampling (using a direct push sampling device) were conducted to find the source and extent of the TCE. These studies determined that significant concentrations of TCE were present just above a clay layer located 25 feet below the ground surface. The TCE contaminant plume was approximately 420 feet long and 150 feet wide.

The OU3 Record of Decision was signed in August 1998 and addresses soil and groundwater contamination. Components of the remedy included excavation and off-site disposal of the leach tank and adjacent soils, treatment of contaminated groundwater, institutional controls, and long-term groundwater monitoring. The process leaching system located immediately northwest of Building GB-1 was removed in 1998. An air sparging/soil vapor extraction (AS/SVE) system was installed in December 2000 and began operating in early January 2001. The system continued operating until December 2004 at which time the system was shut down due to reduced groundwater contaminant concentrations.

Periodic groundwater monitoring was conducted as outlined in the AS/SVE system operations and maintenance manual and monitoring reports. An evaluation to determine if additional operation of the AS/SVE system is required is being conducted. A Tier II Sampling and Analysis Plan for a Site 26 Post-AS/SVE Operation Investigation was submitted to EPA and NJDEP in June 2013. A Classification Exception Area will be established to ensure that use of groundwater in the affected area is prohibited and long-term periodic groundwater monitoring will be conducted to assess contaminant status and potential threats to human health and the environment. Since contaminants have been left in place, site conditions and risks will be reviewed every 5 years. Site 26 (OU3) was included in the March 2013 Third Five-Year Review.

SITE 26 (OU7): PCE PLUME

SITE HISTORY

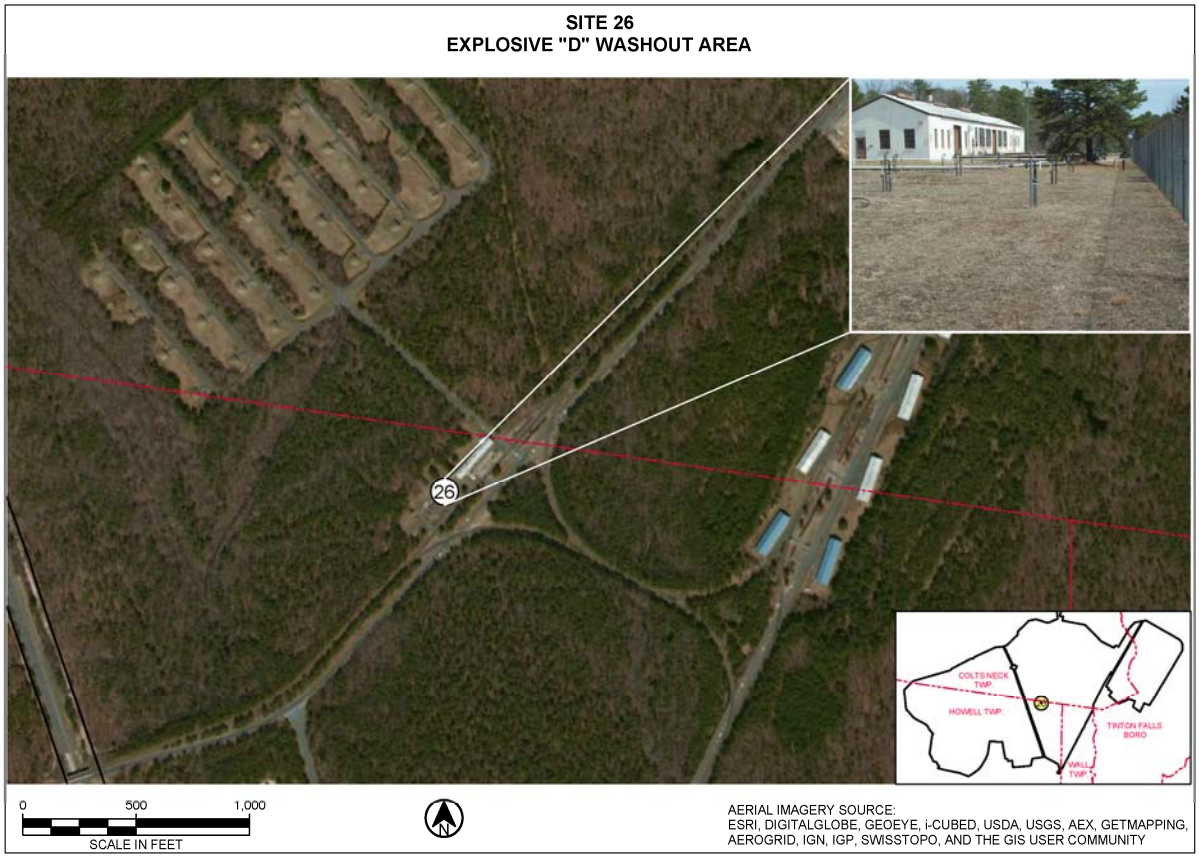
Operable Unit 7 (OU7) consists of the tetrachloroethene (PCE) portion of the Site 26 groundwater solvent plume southwest of Building GB-1, which is located within the Mainside Area. There are two OUs defined within the solvent plume in Site 26 groundwater southwest of Building GB-1. OU3 consists of the portion of the solvent plume southwest of Building GB-1 composed primarily of TCE and 1,2-DCE. A feasibility study and a Record of Decision have been completed for OU3. Active remediation to remove the solvent components of the plume has been underway by the Navy since January 2001 in accordance with the Record of Decision for OU3. The estimated OU7 PCE component of the solvent plume at Site 26 overlaps and partially coincides with the estimated OU3 solvent plume currently under active remediation.

SITE STATUS

OU7 was investigated during the Initial Assessment Study (1983), Site Investigation (1986) Phase I Remedial Investigation (1993), and Phase II Remedial Investigation (1995). Phase II activities included a soil gas survey, installation and sampling of groundwater monitoring wells, and surface and subsurface soil sampling.

The purpose of the February 2004 Feasibility Study for OU7 was to evaluate alternatives available for remediation of the Site 26 PCE plume component. A Final Proposed Plan for OU7 was prepared in September 2004. The Navy, with EPA and NJDEP, has selected land use controls and long-term monitoring as the selected remedy. The OU7 Record of Decision and Remedial Design for Land Use Controls, Site 26 PCE Plume document were finalized in January 2007.

A Classification Exception Area will be established to ensure that use of groundwater in the affected area is prohibited and long-term periodic groundwater monitoring will be conducted to assess contaminant status and potential threats to human health and the environment. Since contaminants have been left in place, site conditions and risks will be reviewed every 5 years. Site 26 (OU7) was included in the March 2013 Third Five-Year Review.



SITE 27 (OU4): PROJECTILE REFURBISHING AREA

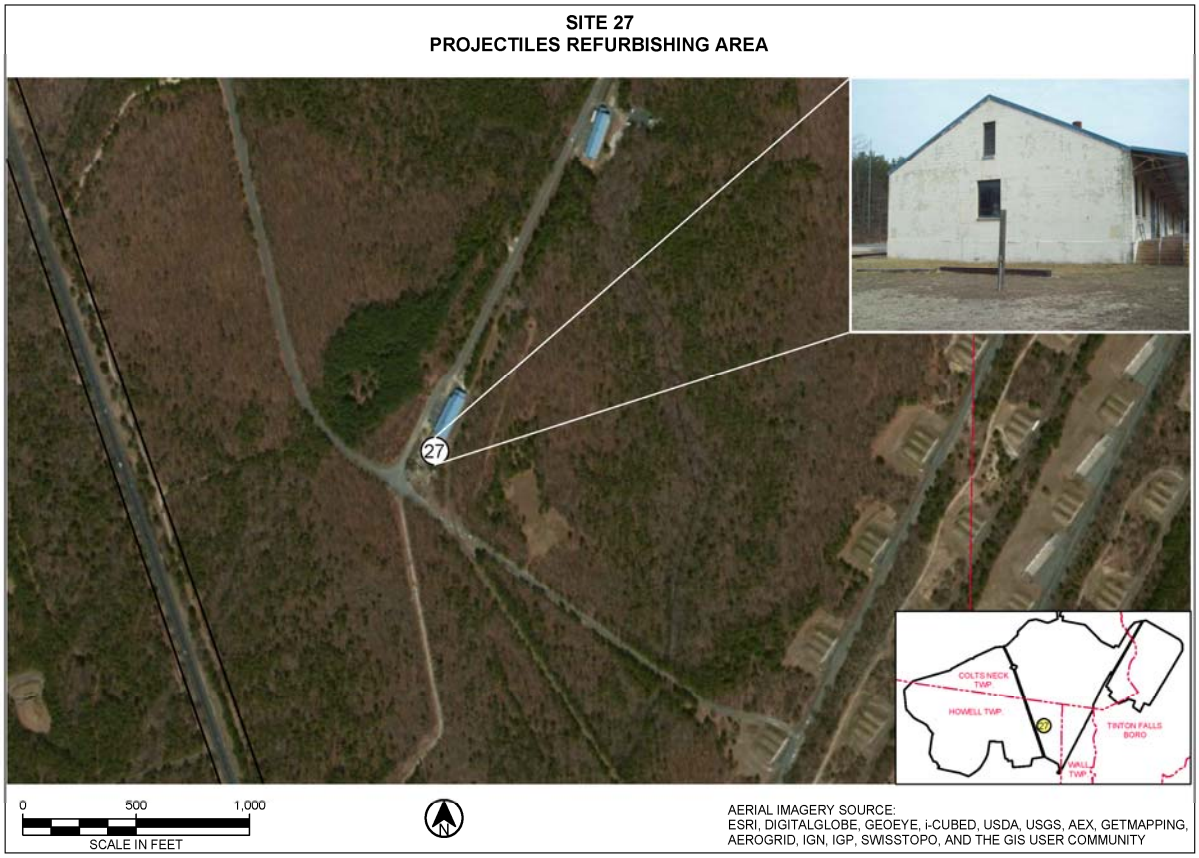
SITE HISTORY

Site 27 is a small area located behind Building E-14 off of Oran Road within the Mainside Area. Projectiles were shot-blasted, repainted and restenciled in Building E-14. Paint wastes were apparently dumped outside.

SITE STATUS

Paint residues were present on the ground surface. Elevated levels of metals and polychlorinated biphenyls were found in site soils. Additional soil borings were constructed and sampled at three depths to determine the extent of contamination. Since the extent of contamination was well defined, a removal action was conducted in 1996. The site was covered with clean soil after excavation of contaminated soils. EPA deemed the removal action to be satisfactory and complete in March 1997.

The OU4 Record of Decision was signed by EPA and the Navy in September 1999 outlining institutional controls (in the form of land use controls) and five-year reviews as the selected remedy because inorganics are present in the soil at levels above NJDEP residential soil cleanup criteria. A notation was made to the NWS Earle Base Master Plan that further measures would be required prior to allowing unrestricted (residential) use of the site. The Site 27 designation was added by the Navy to the Base Master Plan in 1999. At this time, no further action is planned for Site 27 under current and planned land use. Site 27 was included in the Third Five-Year Review that was finalized in March 2013.



SITE 28: WASTE OIL TANK WEST OF BUILDING C-14

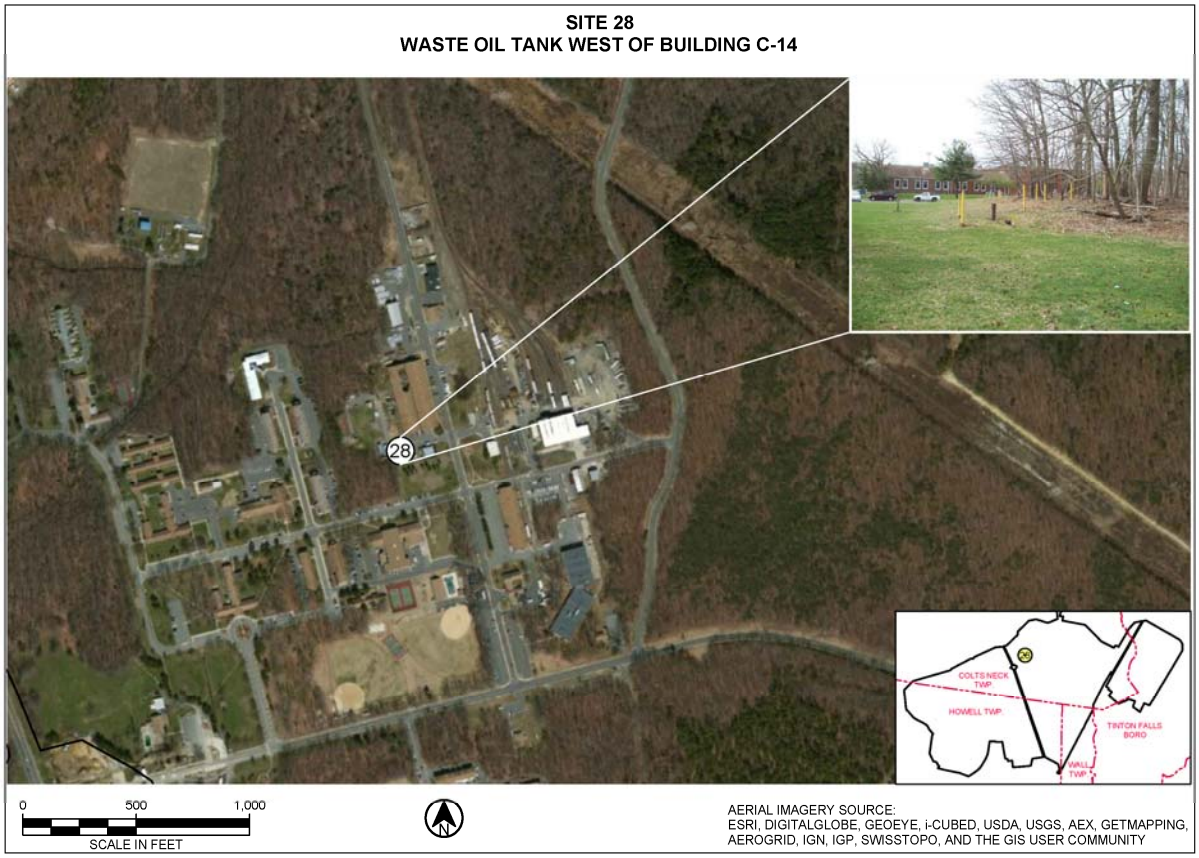
SITE HISTORY

Site 28 was a 2,000-gallon underground storage tank located just west of Building C-14, within the Mainside Area that was used for the collection of waste oil.

SITE STATUS

The tank was identified in the February 1983 Initial Assessment Study and did not warrant any additional confirmation study.

A closure plan for removal of the tank and associated piping was approved by NJDEP in March 1987. The Navy removed the tank in May 1988 and conducted soil sampling. Final closure certification was submitted by the Navy in June 1992. NJDEP concurrence of the closure certification was received in July 1992. No further action is required at this site.



SITE 29 (OU4): PCB SPILL SITE

SITE HISTORY

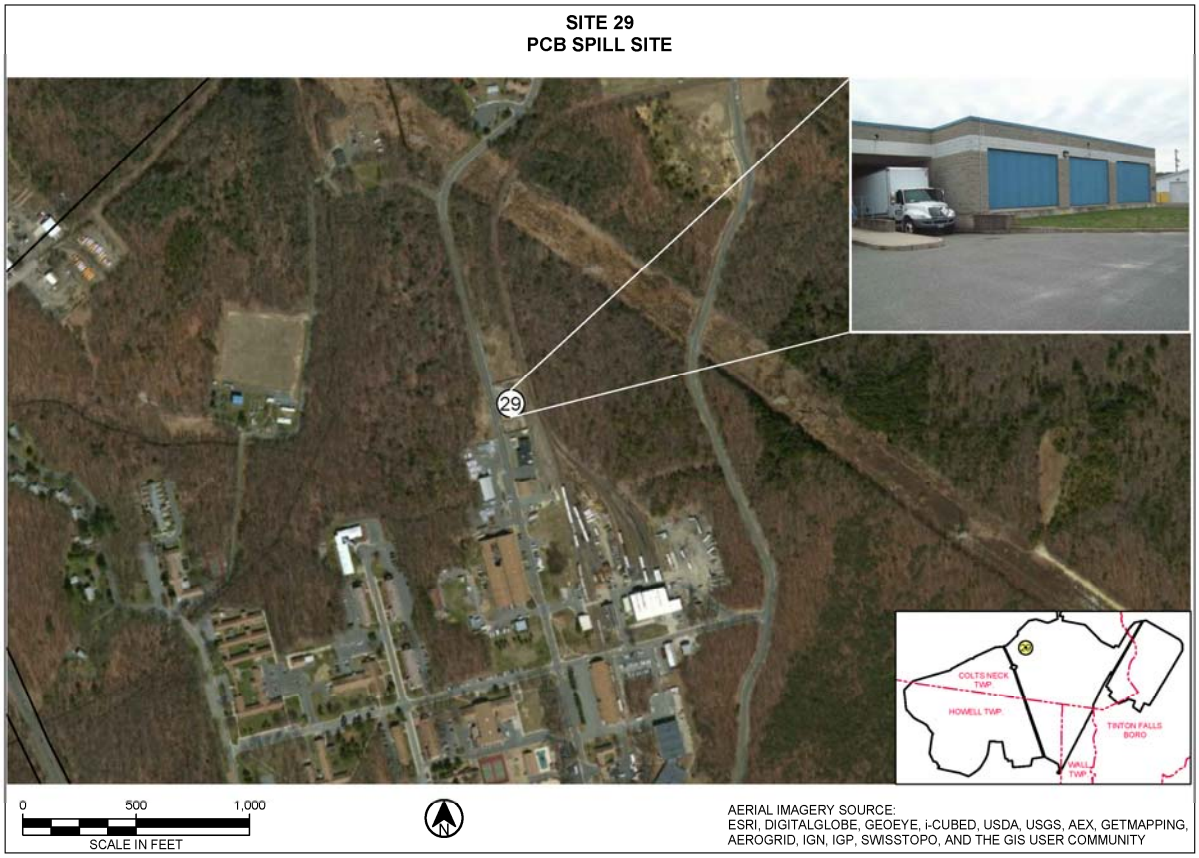
Site 29 is an area in the storage yard north of Building C-16 where a polychlorinated biphenyl (PCB) transformer was vandalized in 1981. The area was cleaned at the time of the spill and all excavated soil was disposed off-site. A new, permitted hazardous waste storage facility has been built on the site.

SITE STATUS

In June 1992, petroleum related compounds were detected in surface soil and low levels of polychlorinated biphenyls and pesticides were found in monitoring wells. The entire area was excavated during site preparation for the new permitted storage facility. The excavated soils were classified as non-hazardous based on post-excavation sampling. Since the existing monitoring wells were formally closed during the excavation, two new wells were installed downgradient of the site. The concentrations of detected parameters in these wells were similar to background conditions.

Since this site is relatively close to Site 16/F, the new monitoring wells were retained for possible use in the Site 16/F long-term monitoring program.

The Record of Decision for OU4 was signed by EPA and the Navy in September 1999. No further action was the selected remedy for Site 29.



SITE 47: CLOSED PESTICIDE SHOP (BUILDING S-86)

SITE HISTORY

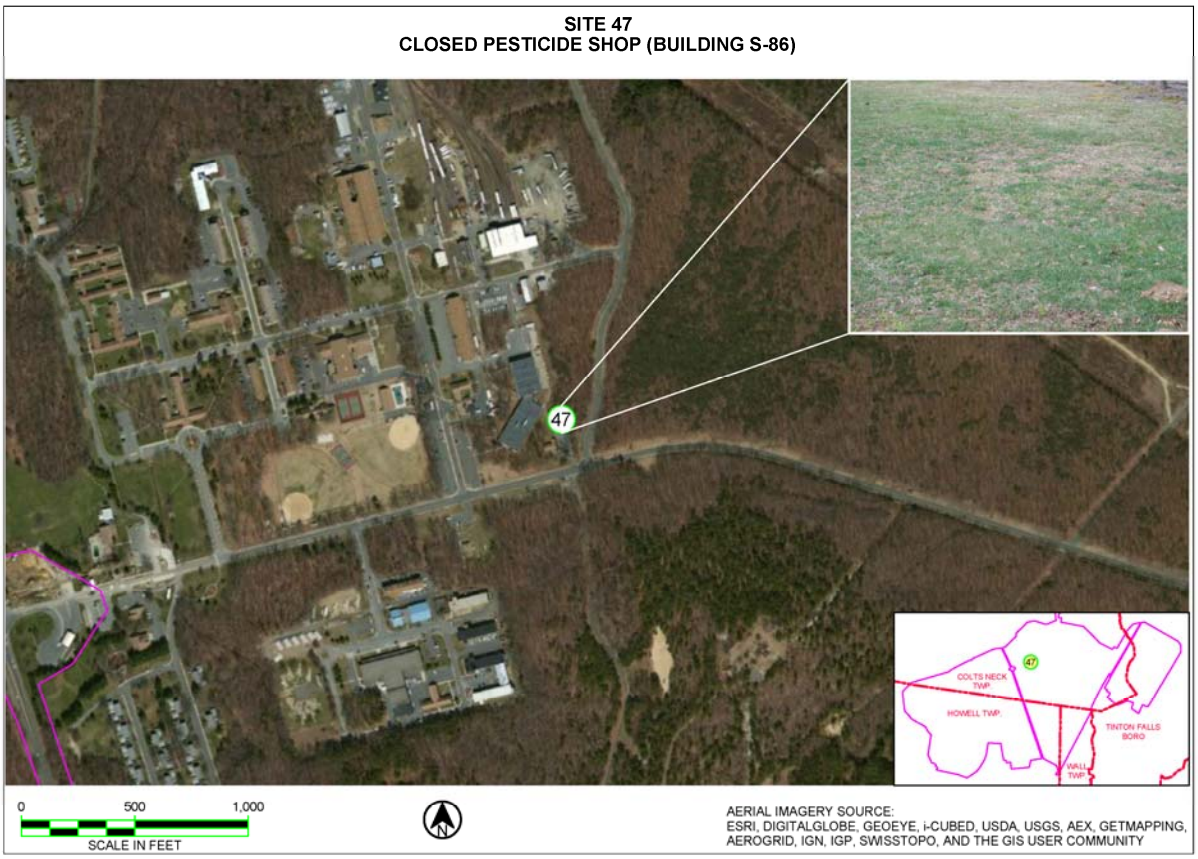
The Pesticide Shop was a small brick building, 25 feet by 12 feet in size, that was used by the NWS Earle Public Works Department for storage and mixing of various pesticides and herbicides used at the base for insect and weed control. A concrete pad (15 feet by 8 feet) was located on the northwest side of the building and an in-ground former septic leach tank was also reportedly located just north of the building.

SITE STATUS

In 1991 all residual pesticide/herbicide product containers were removed from Building S-86 and properly disposed.

Sampling of soils in the vicinity of the building identified the presence of various pesticide compounds, including chlordane and 4,4' DDT, at levels above the NJDEP Residential and Non-Residential Soil Cleanup Criteria. Shallow groundwater testing revealed a slightly elevated reading for Endosulfan I. Sludge in the septic tank, which had previously serviced the building, was found to contain chlordane.

The excavation and off-site disposal of contaminated soils and the septic tank and its contents, and the demolition of the pesticide shop were conducted in 2000. Based on the removal action and additional groundwater sampling, the EPA (2002) and NJDEP (2003) issued concurrence letters that no further action is warranted at the site.



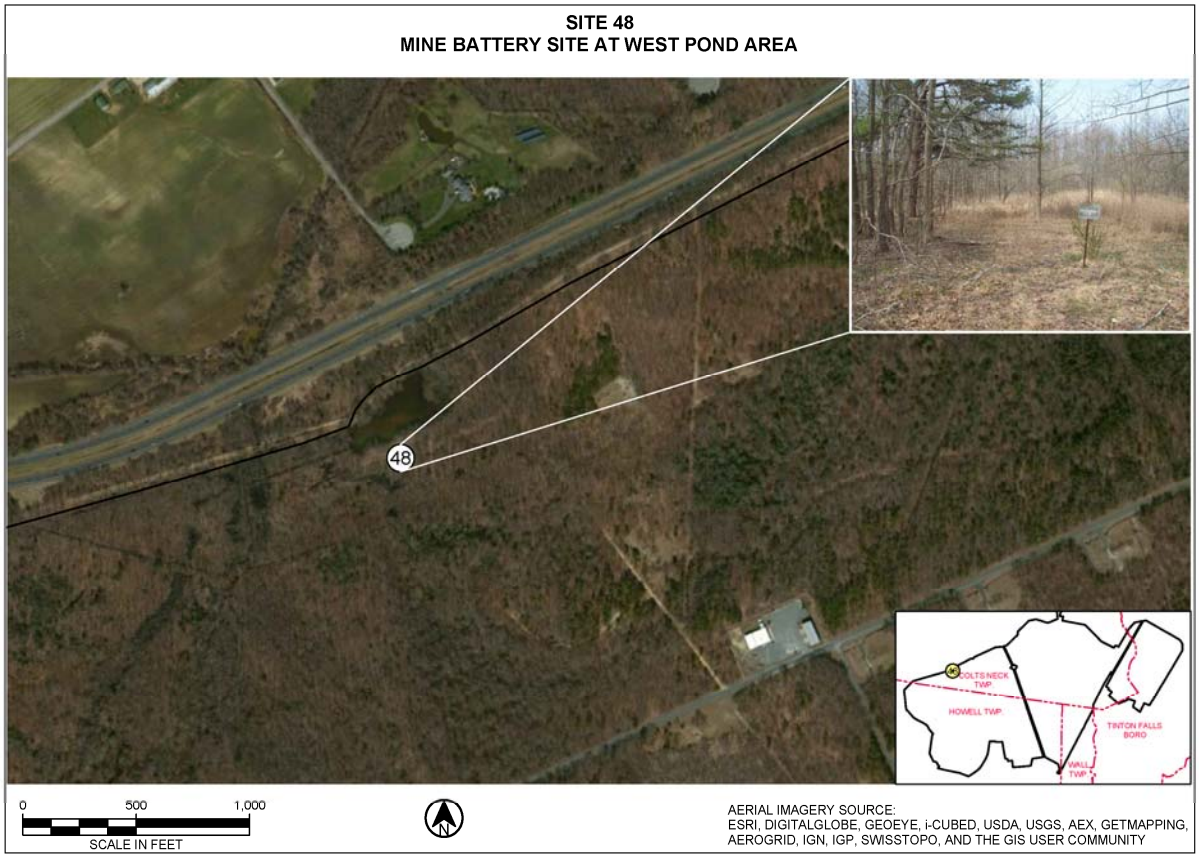
SITE 48: MINE BATTERY SITE AT WEST POND AREA

SITE HISTORY

Located along the northern fence line of the Mainside Area, west of Highway 34, Site 48 is an approximately 3 to 4 acre area immediately adjacent to West Pond where the burial of mine batteries was discovered by a base hunter. The batteries have been evaluated as being inert and soil screening in 1998 revealed the presence of metals.

SITE STATUS

A more comprehensive environmental evaluation of this disposal site was conducted in 1999. A Final Preliminary Assessment/Site Investigation Report for Sites 47 and 48 was completed in 2003 and a removal action was completed in 2004 that consisted of the excavation and off-site removal of mine actuators from the pond and adjacent upland and wetland areas. The NJDEP issued a letter of concurrence in September 2004 indicating that no further action was warranted for Site 48.



EPIC SITE L – SITE 41: MSC VAN PARKING AREA

SITE HISTORY

Comprising 15.7-acres near Pine Brook Road and Asbury Avenue in the Mainside Area, approximately 4 acres of this site have been used by the Public Works Department for storage of new and old telephone poles; railroad ballast stone; miscellaneous metal, plastic, and wood scrap material; and small asphalt and concrete piles. Materials have been stored at the site for 25 to 30 years and past storage practice were not well documented. The remaining area is a powerline easement.

SITE STATUS

There is no evidence or reports of any hazardous materials operations at the site, but some areas appear to have been impacted by storage operations. Eight surface soil samples were taken in representative areas. Low levels of two organic compounds typically encountered in treated lumber were found at levels very near NJDEP Non-Residential Direct Contact Soil Cleanup Criteria during the 1996 Remedial Investigation.

The site continues to be used by the Navy for normal base maintenance activities. The Navy has initiated discussions with EPA and NJDEP regarding the continued use of the site. EPA Data Useability Worksheets were completed and finalized for Site 41 in April 2013.

EPIC SITE Q – SITE 46: FIRE FIGHTING TRAINING SCHOOL

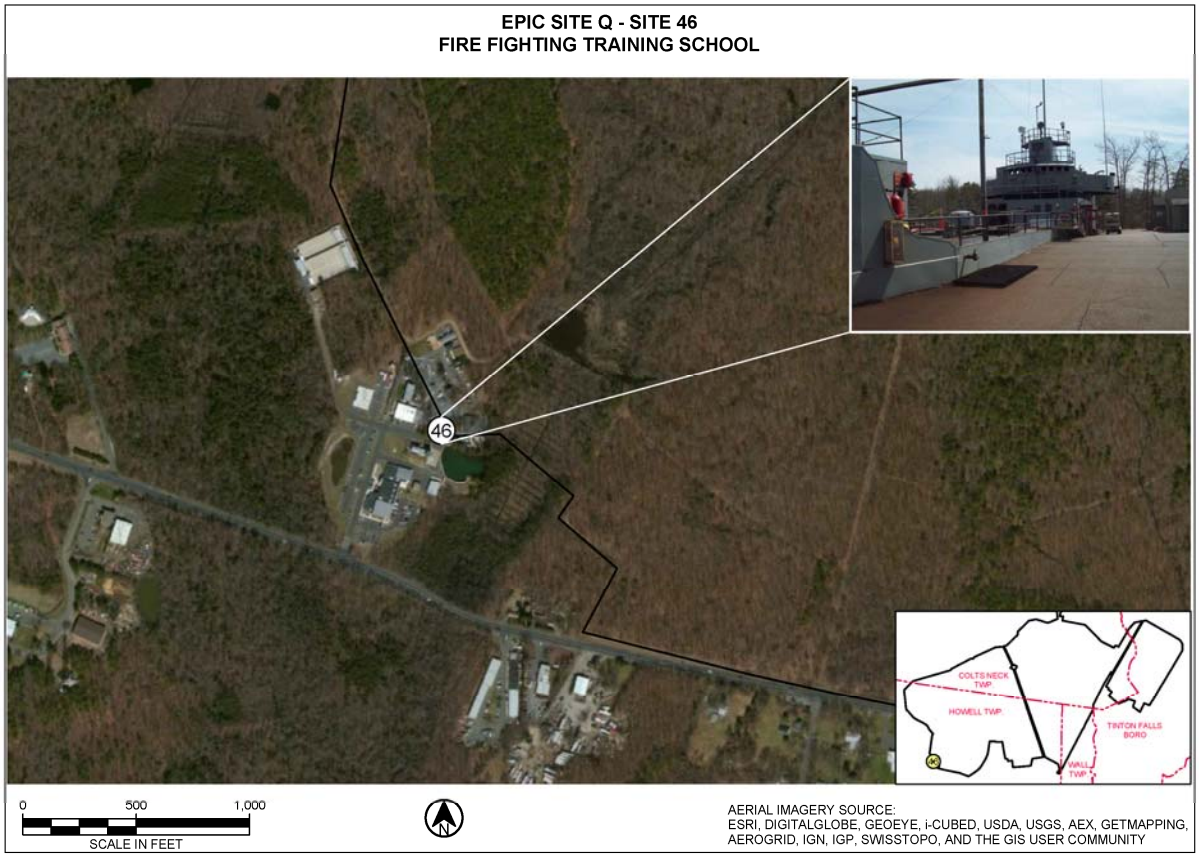
SITE HISTORY

Site 46 was developed in 1975 by the Military Sealift Command as a training facility and is a 5.5-acre site located outside the Mainside Area perimeter fence. Fire fighting training takes place on a concrete pad surrounded by a bermed, paved area. All water used for training is contained and collected for treatment. Prior to 2006 the facility had an oil/water separator and retention pond for the treatment of training waste waters and a National Pollutant Discharge Elimination System (NPDES) permit for disposal of the water from the separator to a small pond. Discharges from the oil/water separator to the adjacent pond were monitored and were in compliance under terms of the NPDES permit.

SITE STATUS

Although there is no evidence of leakage, the school has extensive underground piping leading to its water treatment facility. There were some cracks in the pavement and also some evidence that water may have flowed over the berm in one section of the containment area. Soil, sediment, and groundwater samples collected in December 1995 indicated a very minor impact from site activities. No significant threat to human or ecological receptors was detected.

The fire fighting school is an active facility used by the Navy. In 2006, the containment system was reconfigured to collect and recirculate all training wastewaters and to prevent future releases. The Navy has initiated discussions with the EPA and NJDEP regarding the continued use of the site. EPA Data Useability Worksheets were completed and finalized for Site 46 in April 2013.



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